Access DB# 92487

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: ERMA CAMERON Examiner #: 71098 Date: 4/25/03
Art Unit: 1762 Phone Number 30 8-2330 Serial Number: 10/020779
Mail Box and Bldg/Room Location: 10D27 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: see attached

Inventors (please provide full names):

Earliest Priority Filing Date:

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

a method of protecting the ceramic parts of ceramic + metal electrical circuits, by treating the ceramic with a dilute solution of siloxane (see claims 20/21) and heating it to crosslink the siloxane into a protective coat (see claims 27-31). The reaction of the siloxane binding to the ceramic (but not the metal) may be called an esterification, a silanization, or a siloxanization.

****

STAFF USE ONLY		Type of Search		Vendors and cost where applicable	
Searcher	R. Fuller	NA Sequence (#)		STN	✓
Searcher Phone #		AA Sequence (#)		Dialog	
Searcher Location		Structure (#)		Questel/Orbit	
Date Searcher Picked Up		Bibliographic	✓	Dr Link	
Date Completed	4/30/03	Litigation		Lexis/Nexis	
Searcher Prep & Review Time	21	Fulltext		Sequence Systems	
Clerical Prep Time		Patent Family		WWW/Internet	
Online Time	94	Other		Other (specify)	

PTO-1590 (8-01)

EIC1700

Search Results Feedback Form (Optional)

Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search ***or contact***:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➢ *I am an examiner in Workgroup:* ☐ *Example:* 1713

➢ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

➢ *Relevant prior art **not** found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in CP3/4 - 3D62 .

```
=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 13:26:32 ON 30 APR 2003
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FILE COVERS 1907 - 30 Apr 2003  VOL 138 ISS 18
FILE LAST UPDATED: 29 Apr 2003  (20030429/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> D QUE L64
L3        27998 SEA FILE=HCAPLUS ABB=ON  (COAT? OR TREAT?)(3A)CERAMIC?
L4          694 SEA FILE=HCAPLUS ABB=ON  L3 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L5        32421 SEA FILE=HCAPLUS ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L6          143 SEA FILE=HCAPLUS ABB=ON  L4 AND L5
L7            3 SEA FILE=HCAPLUS ABB=ON  L6 AND ELECT?(3A)CIRCUIT?
L8          451 SEA FILE=HCAPLUS ABB=ON  L5 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L9            8 SEA FILE=HCAPLUS ABB=ON  L8 AND ELECT?(3A)CIRCUIT?
L10          18 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND CIRCUIT?
L12           2 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND ELECTRI?(4A)SWITCH?
L13          19 SEA FILE=HCAPLUS ABB=ON  L7 OR L9 OR L10 OR L12
L15        5746 SEA FILE=HCAPLUS ABB=ON  SELECT?(3A)COAT?
L16          92 SEA FILE=HCAPLUS ABB=ON  L5 AND L15
L17           5 SEA FILE=HCAPLUS ABB=ON  L16 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L18          23 SEA FILE=HCAPLUS ABB=ON  L13 OR L17
L51           6 SEA FILE=JAPIO ABB=ON  ESTERI?(3A)SILICON?
L62           4 SEA FILE=HCAPLUS ABB=ON  L51 AND COATINGS/IT
L63           1 SEA FILE=HCAPLUS ABB=ON  L51 AND CERAMIC?/SC,SX
L64          28 SEA FILE=HCAPLUS ABB=ON  L18 OR L62 OR L63


=> FILE WPIX
FILE 'WPIX' ENTERED AT 13:26:42 ON 30 APR 2003
COPYRIGHT (C) 2003 THOMSON DERWENT

FILE LAST UPDATED:           29 APR 2003      <20030429/UP>
MOST RECENT DERWENT UPDATE:      200327        <200327/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE
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Due to data production problems in updates 24 and 25 the WPI file had to be reset to update 200323 on April 24 and the corrected updates were reloaded.
SDIs for update 24 were rerun. The previous SDI run for 24 has been credited.
We also recommend to recreate answer sets dated between April 10 and 24. Charges incurred to accomplish this will be credited of course.

```
>>> NEW WEEKLY SDI FREQUENCY AVAILABLE --> see NEWS  <<<

>>> SLART (Simultaneous Left and Right Truncation) is now
    available in the /ABEX field. An additional search field
    /BIX is also provided which comprises both /BI and /ABEX <<<

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES,
    SEE http://www.derwent.com/dwpi/updates/dwpicov/index.html <<<

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
    PLEASE VISIT:
 http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
    GUIDES, PLEASE VISIT:
    http://www.derwent.com/userguides/dwpi_guide.html <<<

=> D QUE L30
L3         27998 SEA FILE=HCAPLUS ABB=ON  (COAT? OR TREAT?)(3A)CERAMIC?
L4           694 SEA FILE=HCAPLUS ABB=ON  L3 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L5         32421 SEA FILE=HCAPLUS ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L6           143 SEA FILE=HCAPLUS ABB=ON  L4 AND L5
L7             3 SEA FILE=HCAPLUS ABB=ON  L6 AND ELECT?(3A)CIRCUIT?
L8           451 SEA FILE=HCAPLUS ABB=ON  L5 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L9             8 SEA FILE=HCAPLUS ABB=ON  L8 AND ELECT?(3A)CIRCUIT?
L10           18 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND CIRCUIT?
L12            2 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND ELECTRI?(4A)SWITCH?
L13           19 SEA FILE=HCAPLUS ABB=ON  L7 OR L9 OR L10 OR L12
L15         5746 SEA FILE=HCAPLUS ABB=ON  SELECT?(3A)COAT?
L16           92 SEA FILE=HCAPLUS ABB=ON  L5 AND L15
L17            5 SEA FILE=HCAPLUS ABB=ON  L16 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L19           23 SEA FILE=WPIX ABB=ON  L13 OR L17
L20            1 SEA FILE=WPIX ABB=ON  L19 AND C04B041?/IC
L21        20375 SEA FILE=WPIX ABB=ON  C04B041?/IC
L22          311 SEA FILE=WPIX ABB=ON  L21 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L24            9 SEA FILE=WPIX ABB=ON  L22 AND H01L?/IC
L25            1 SEA FILE=WPIX ABB=ON  L22 AND ESTERI?(3A)CERAMIC?
L26            3 SEA FILE=WPIX ABB=ON  L22 AND ESTERI?
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L27            4 SEA FILE=WPIX ABB=ON  L19 AND (ESTERIFI? OR SELECT?(4A)COAT?)
L28            4 SEA FILE=WPIX ABB=ON  L19 AND (ESTERIF? OR SELECT?(4A)COAT?)
L29            7 SEA FILE=WPIX ABB=ON  L19 AND H01L?/IC
L30           20 SEA FILE=WPIX ABB=ON  L20 OR L24 OR (L25 OR L26 OR L27 OR L28
                 OR L29)
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=> FILE JICST
FILE 'JICST-EPLUS' ENTERED AT 13:26:52 ON 30 APR 2003
COPYRIGHT (C) 2003 Japan Science and Technology Corporation (JST)

FILE COVERS 1985 TO 28 APR 2003 (20030428/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED
TERM (/CT) THESAURUS RELOAD.

=> D QUE L31
L3         27998 SEA FILE=HCAPLUS ABB=ON  (COAT? OR TREAT?)(3A)CERAMIC?
L4           694 SEA FILE=HCAPLUS ABB=ON  L3 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L5         32421 SEA FILE=HCAPLUS ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L6           143 SEA FILE=HCAPLUS ABB=ON  L4 AND L5
L7             3 SEA FILE=HCAPLUS ABB=ON  L6 AND ELECT?(3A)CIRCUIT?
L8           451 SEA FILE=HCAPLUS ABB=ON  L5 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L9             8 SEA FILE=HCAPLUS ABB=ON  L8 AND ELECT?(3A)CIRCUIT?
L10           18 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND CIRCUIT?
L12            2 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND ELECTRI?(4A)SWITCH?
L13           19 SEA FILE=HCAPLUS ABB=ON  L7 OR L9 OR L10 OR L12
L15         5746 SEA FILE=HCAPLUS ABB=ON  SELECT?(3A)COAT?
L16           92 SEA FILE=HCAPLUS ABB=ON  L5 AND L15
L17            5 SEA FILE=HCAPLUS ABB=ON  L16 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L31            0 SEA FILE=JICST-EPLUS ABB=ON  L13 OR L17
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```
=> FILE INSPEC
FILE 'INSPEC' ENTERED AT 13:27:03 ON 30 APR 2003
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FILE LAST UPDATED: 28 APR 2003      <20030428/UP>
FILE COVERS 1969 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN
    THE BASIC INDEX >>>

<<< NEW DISPLAY FORMAT 'SCAN' AVAILABLE NOW >>>

=> D QUE L48
L3         27998 SEA FILE=HCAPLUS ABB=ON  (COAT? OR TREAT?)(3A)CERAMIC?
L4           694 SEA FILE=HCAPLUS ABB=ON  L3 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L5         32421 SEA FILE=HCAPLUS ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
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L6          143 SEA FILE=HCAPLUS ABB=ON  L4 AND L5
L7            3 SEA FILE=HCAPLUS ABB=ON  L6 AND ELECT?(3A)CIRCUIT?
L8          451 SEA FILE=HCAPLUS ABB=ON  L5 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L9            8 SEA FILE=HCAPLUS ABB=ON  L8 AND ELECT?(3A)CIRCUIT?
L10          18 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND CIRCUIT?
L12           2 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND ELECTRI?(4A)SWITCH?
L13          19 SEA FILE=HCAPLUS ABB=ON  L7 OR L9 OR L10 OR L12
L15        5746 SEA FILE=HCAPLUS ABB=ON  SELECT?(3A)COAT?
L16          92 SEA FILE=HCAPLUS ABB=ON  L5 AND L15
L17           5 SEA FILE=HCAPLUS ABB=ON  L16 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L33        5984 SEA FILE=INSPEC ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L44           0 SEA FILE=COMPENDEX ABB=ON  L13 OR L17
L45           8 SEA FILE=COMPENDEX ABB=ON  L33 AND (POLYSILOXAN? OR SILOXANE?
                OR SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L46           2 SEA FILE=COMPENDEX ABB=ON  L45 AND (ELECT? OR CIRCUIT? OR
                SWITCH?)
L47           1 SEA FILE=COMPENDEX ABB=ON  L45 AND COAT?
L48           3 SEA FILE=COMPENDEX ABB=ON  L44 OR L46 OR L47

=> FILE EMA
FILE 'EMA' ENTERED AT 13:27:15 ON 30 APR 2003
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FILE LAST UPDATED: 23 APR 2003       <20030423/UP>
FILE COVERS 1986 TO DATE.

=> D QUE L43
L3        27998 SEA FILE=HCAPLUS ABB=ON  (COAT? OR TREAT?)(3A)CERAMIC?
L4          694 SEA FILE=HCAPLUS ABB=ON  L3 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L5        32421 SEA FILE=HCAPLUS ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L6          143 SEA FILE=HCAPLUS ABB=ON  L4 AND L5
L7            3 SEA FILE=HCAPLUS ABB=ON  L6 AND ELECT?(3A)CIRCUIT?
L8          451 SEA FILE=HCAPLUS ABB=ON  L5 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L9            8 SEA FILE=HCAPLUS ABB=ON  L8 AND ELECT?(3A)CIRCUIT?
L10          18 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND CIRCUIT?
L12           2 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND ELECTRI?(4A)SWITCH?
L13          19 SEA FILE=HCAPLUS ABB=ON  L7 OR L9 OR L10 OR L12
L15        5746 SEA FILE=HCAPLUS ABB=ON  SELECT?(3A)COAT?
L16          92 SEA FILE=HCAPLUS ABB=ON  L5 AND L15
L17           5 SEA FILE=HCAPLUS ABB=ON  L16 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L43           0 SEA FILE=EMA ABB=ON  L13 OR L17

=> FILE COMPENDEX
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<<< NEW DISPLAY FORMAT 'SCAN' AVAILABLE NOW >>>

=> D QUE L66
L3          27998 SEA FILE=HCAPLUS ABB=ON  (COAT? OR TREAT?)(3A)CERAMIC?
L4            694 SEA FILE=HCAPLUS ABB=ON  L3 AND (POLYSILOXAN? OR SILOXANE? OR
                  SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                  POLYSIL?))
L5          32421 SEA FILE=HCAPLUS ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L6            143 SEA FILE=HCAPLUS ABB=ON  L4 AND L5
L7              3 SEA FILE=HCAPLUS ABB=ON  L6 AND ELECT?(3A)CIRCUIT?
L8            451 SEA FILE=HCAPLUS ABB=ON  L5 AND (POLYSILOXAN? OR SILOXANE? OR
                  SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                  POLYSIL?))
L9              8 SEA FILE=HCAPLUS ABB=ON  L8 AND ELECT?(3A)CIRCUIT?
L10            18 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND CIRCUIT?
L12             2 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND ELECTRI?(4A)SWITCH?
L13            19 SEA FILE=HCAPLUS ABB=ON  L7 OR L9 OR L10 OR L12
L15          5746 SEA FILE=HCAPLUS ABB=ON  SELECT?(3A)COAT?
L16            92 SEA FILE=HCAPLUS ABB=ON  L5 AND L15
L17             5 SEA FILE=HCAPLUS ABB=ON  L16 AND (POLYSILOXAN? OR SILOXANE? OR
                  SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                  POLYSIL?))
L19            23 SEA FILE=WPIX ABB=ON  L13 OR L17
L20             1 SEA FILE=WPIX ABB=ON  L19 AND C04B041?/IC
L21         20375 SEA FILE=WPIX ABB=ON  C04B041?/IC
L22           311 SEA FILE=WPIX ABB=ON  L21 AND (POLYSILOXAN? OR SILOXANE? OR
                  SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                  POLYSIL?))
L24             9 SEA FILE=WPIX ABB=ON  L22 AND H01L?/IC
L25             1 SEA FILE=WPIX ABB=ON  L22 AND ESTERI?(3A)CERAMIC?
L26             3 SEA FILE=WPIX ABB=ON  L22 AND ESTERI?
L27             4 SEA FILE=WPIX ABB=ON  L19 AND (ESTERIFI? OR SELECT?(4A)COAT?)
L28             4 SEA FILE=WPIX ABB=ON  L19 AND (ESTERIF? OR SELECT?(4A)COAT?)
L29             7 SEA FILE=WPIX ABB=ON  L19 AND H01L?/IC
L33          5984 SEA FILE=INSPEC ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L44             0 SEA FILE=COMPENDEX ABB=ON  L13 OR L17
L45             8 SEA FILE=COMPENDEX ABB=ON  L33 AND (POLYSILOXAN? OR SILOXANE?
                  OR SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                  POLYSIL?))
L46             2 SEA FILE=COMPENDEX ABB=ON  L45 AND (ELECT? OR CIRCUIT? OR
                  SWITCH?)
L47             1 SEA FILE=COMPENDEX ABB=ON  L45 AND COAT?
L48             3 SEA FILE=COMPENDEX ABB=ON  L44 OR L46 OR L47
L49             0 SEA FILE=JAPIO ABB=ON  L13 OR L17
L50             2 SEA FILE=JAPIO ABB=ON  L20 OR L24 OR (L25 OR L26 OR L27 OR L28
                  OR L29)
L51             6 SEA FILE=JAPIO ABB=ON  ESTERI?(3A)SILICON?
L52             0 SEA FILE=JAPIO ABB=ON  L51 AND (POLYSILOXAN? OR SILOXANE? OR
                  SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
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                POLYSIL?))
L56         4992 SEA FILE=JAPIO ABB=ON  (TREAT? OR COAT? OR ESTERI?)(3A)SILICON

L57           52 SEA FILE=JAPIO ABB=ON  L56 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L58            1 SEA FILE=JAPIO ABB=ON  L57 AND CIRCUIT?
L59            0 SEA FILE=JAPIO ABB=ON  L57 AND ELECTR?(3A)(SWITCH? OR HYBRID?)

L65            1 SEA FILE=COMPENDEX ABB=ON  L49 OR L50 OR L52 OR L58 OR L59
L66            4 SEA FILE=COMPENDEX ABB=ON  L65 OR L48


=> FILE JAPIO
FILE 'JAPIO' ENTERED AT 13:27:39 ON 30 APR 2003
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FILE LAST UPDATED: 4 APR 2003        <20030404/UP>
FILE COVERS APR 1973 TO DECEMBER 26, 2002

<<< GRAPHIC IMAGES AVAILABLE >>>

=> D QUE L60
L3         27998 SEA FILE=HCAPLUS ABB=ON  (COAT? OR TREAT?)(3A)CERAMIC?
L4           694 SEA FILE=HCAPLUS ABB=ON  L3 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L5         32421 SEA FILE=HCAPLUS ABB=ON  CERAMIC?(4A)(HYBRID? OR METAL?)
L6           143 SEA FILE=HCAPLUS ABB=ON  L4 AND L5
L7             3 SEA FILE=HCAPLUS ABB=ON  L6 AND ELECT?(3A)CIRCUIT?
L8           451 SEA FILE=HCAPLUS ABB=ON  L5 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L9             8 SEA FILE=HCAPLUS ABB=ON  L8 AND ELECT?(3A)CIRCUIT?
L10           18 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND CIRCUIT?
L12            2 SEA FILE=HCAPLUS ABB=ON  (L6 OR L8) AND ELECTRI?(4A)SWITCH?
L13           19 SEA FILE=HCAPLUS ABB=ON  L7 OR L9 OR L10 OR L12
L15         5746 SEA FILE=HCAPLUS ABB=ON  SELECT?(3A)COAT?
L16           92 SEA FILE=HCAPLUS ABB=ON  L5 AND L15
L17            5 SEA FILE=HCAPLUS ABB=ON  L16 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L19           23 SEA FILE=WPIX ABB=ON  L13 OR L17
L20            1 SEA FILE=WPIX ABB=ON  L19 AND C04B041?/IC
L21        20375 SEA FILE=WPIX ABB=ON  C04B041?/IC
L22          311 SEA FILE=WPIX ABB=ON  L21 AND (POLYSILOXAN? OR SILOXANE? OR
                SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                POLYSIL?))
L24            9 SEA FILE=WPIX ABB=ON  L22 AND H01L?/IC
L25            1 SEA FILE=WPIX ABB=ON  L22 AND ESTERI?(3A)CERAMIC?
L26            3 SEA FILE=WPIX ABB=ON  L22 AND ESTERI?
L27            4 SEA FILE=WPIX ABB=ON  L19 AND (ESTERIFI? OR SELECT?(4A)COAT?)
L28            4 SEA FILE=WPIX ABB=ON  L19 AND (ESTERIF? OR SELECT?(4A)COAT?)
L29            7 SEA FILE=WPIX ABB=ON  L19 AND H01L?/IC
L49            0 SEA FILE=JAPIO ABB=ON  L13 OR L17
L50            2 SEA FILE=JAPIO ABB=ON  L20 OR L24 OR (L25 OR L26 OR L27 OR L28
                OR L29)
L51            6 SEA FILE=JAPIO ABB=ON  ESTERI?(3A)SILICON?
```

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L52            0 SEA FILE=JAPIO ABB=ON  L51 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L56         4992 SEA FILE=JAPIO ABB=ON  (TREAT? OR COAT? OR ESTERI?)(3A)SILICON

L57           52 SEA FILE=JAPIO ABB=ON  L56 AND (POLYSILOXAN? OR SILOXANE? OR
                 SILANI? OR SILOXANI? OR ESTERI?(2A)(SILAN? OR SILOXAN? OR
                 POLYSIL?))
L58            1 SEA FILE=JAPIO ABB=ON  L57 AND CIRCUIT?
L59            0 SEA FILE=JAPIO ABB=ON  L57 AND ELECTR?(3A)(SWITCH? OR HYBRID?)

L60            3 SEA FILE=JAPIO ABB=ON  L49 OR L50 OR L52 OR L58 OR L59
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=> DUP REM L64 L30 L48 L66 L60
FILE 'HCAPLUS' ENTERED AT 13:28:18 ON 30 APR 2003
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FILE 'JAPIO' ENTERED AT 13:28:18 ON 30 APR 2003
COPYRIGHT (C) 2003 Japanese Patent Office (JPO)- JAPIO
PROCESSING COMPLETED FOR L64
PROCESSING COMPLETED FOR L30
PROCESSING COMPLETED FOR L48
PROCESSING COMPLETED FOR L66
PROCESSING COMPLETED FOR L60
L69           53 DUP REM L64 L30 L48 L66 L60 (5 DUPLICATES REMOVED)

=> D L69 ALL 1-53

L69  ANSWER 1 OF 53  HCAPLUS  COPYRIGHT 2003 ACS
AN   2003:42932  HCAPLUS
DN   138:82148
TI   Method of sealing an air-filled cavity for the packaging of semiconductor
     devices
IN   Bregante, Raymond S.; Shaffer, Tony; Mellen, K. Scott; Ross, Richard J.
PA   Rjr Polymers, Inc., USA
SO   U.S. Pat. Appl. Publ., 6 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  H01L021-48
NCL  438127000
CC   76-14 (Electric Phenomena)
     Section cross-reference(s): 38
FAN.CNT 1
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ---------------   ----  --------      ---------------  --------
PI   US 2003013234      A1   20030116      US 2001-904583   20010712
```

US 6511866 B2 20030128
WO 2003007362 A1 20030123 WO 2002-US19501 20020619
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI US 2001-904583 A 20010712
AB The invention relates to the design of an air-filled cavity for the packaging of semiconductor devices in a manner that will maintain a gas-impermeable seal during the high temps. encountered during fabrication and use. Semiconductor **circuit** devices are incorporated into moisture-impenetrable electronic packages by forming enclosures around the die in three sep. parts: a base, sidewalls, and a lid. The die is first soldered or otherwise bonded to the base, followed by attachment of the sidewalls to the base, and the lid to the sidewalls. For procedures involving a heat-conductive base and a high soldering temp., the die can be secured to the base at the high soldering temp., followed by application of the sidewalls to the base at a significantly lower temp., which avoids potential high-temp. damage to the sidewalls. Plastic sidewalls which would otherwise deteriorate or become distorted upon exposure to the high soldering temp. can thus be used. For electronic packages in general, the use of plastic sidewalls allows for the use of combinations of materials for the lid and base that are otherwise incompatible, and reduces or eliminates the incidence of failure due to stress fractures that occur during the high temps. encountered in fabrication, assembly, testing, or use of the package.
ST sealing air filled cavity semiconductor device packaging
IT Epoxy resins, processes
Phenolic resins, processes
Phenoxy resins
Polyamides, processes
Polysiloxanes, processes
Polysulfones, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(adhesive material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(arom., frame material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Metals, uses
RL: DEV (Device component use); USES (Uses)
(base material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Glass, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(base material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Wires
(conductive leads; method of sealing an air-filled cavity for the packaging of semiconductor devices)

IT Liquid crystals, polymeric
(frame material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Packaging materials
(gas-impermeable; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Lids
(heat-sealable; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Sealing
(heat-sealing; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(lid material, frame material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT **Ceramics**
(**metal-coated,** base material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Electronic packages
Electronic packaging materials
Electronic packaging process
Semiconductor devices
Soldering
(method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Adhesives
(sealing of lid to frame by; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(thermoplastics, frame material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT copper alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(base material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT 1304-28-5, Barium oxide, uses 1317-38-0, Cupric oxide, uses 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(alumina dopant; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT 7440-50-8, Copper, uses
RL: DEV (Device component use); USES (Uses)
(base material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT 11148-32-6 12647-03-9
RL: TEM (Technical or engineered material use); USES (Uses)
(base material; method of sealing an air-filled cavity for the packaging of semiconductor devices)
IT 1304-56-9, Beryllium oxide, uses 1344-28-1, Alumina, uses 12033-89-5, Silicon nitride, uses 24304-00-5, Aluminum nitride
RL: TEM (Technical or engineered material use); USES (Uses)
(undoped, doped, base material; method of sealing an air-filled cavity for the packaging of semiconductor devices)

L69 ANSWER 2 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:75614 HCAPLUS

DN 138:146085
TI Insulated semiconductor devices provided in decreased thermal stress and strain
IN Kurihara, Yasutoshi; Morita, Toshiaki; Kodama, Hironori; Iizuka, Mamoru; Koyama, Kenji; Oshima, Masahiko; Fukui, Satoshi; Hamayoshi, Shigeyuki
PA Hitachi Ltd., Japan; Hitachi Metals, Ltd.
SO Jpn. Kokai Tokkyo Koho, 29 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L023-13
ICS H01L023-373
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 56, 57
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003031732	A2	20030131	JP 2001-219099	20010719
PRAI	JP 2001-219099		20010719		

AB The title devices comprise a ceramic substrate fixed by its one side over a binding metal layer on a support plate, and a semiconductor component fixed over a metal **circuit** layer on the other side of the ceramic substrate. The support plate is made of a composite material comprising powd. ceramic particles dispersed in an Al alloy matrix. The binding metal layer and the metal **circuit** layer are also made of an Al alloy. The ceramic substrate, support plate, and the Al alloy metal layers significantly decreases thermal stress and strain to the devices.
ST aluminum alloy **circuit** ceramic thermal stress strain semiconductor device
IT Composites
(Al alloy/ceramic; insulated semiconductor devices provided in decreased thermal stress and strain)
IT Electric insulators
(for semiconductor devices; insulated semiconductor devices provided in decreased thermal stress and strain)
IT **Polysiloxanes**, properties
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(gel, filler in packages; insulated semiconductor devices provided in decreased thermal stress and strain)
IT Semiconductor devices
(insulated semiconductor devices provided in decreased thermal stress and strain)
IT Ceramics
(particle suspension in aluminum alloy; insulated semiconductor devices provided in decreased thermal stress and strain)
IT Ceramics
(substrates, semiconductor device packaging on; insulated semiconductor devices provided in decreased thermal stress and strain)
IT Stress, mechanical
(thermal, decrease of, in semiconductor devices; insulated semiconductor devices provided in decreased thermal stress and strain)
IT Strain
(thermal, decrease of; insulated semiconductor devices provided in decreased thermal stress and strain)
IT Aluminum alloy, base
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(**circuit** layer and plate matrix; insulated semiconductor

devices provided in decreased thermal stress and strain)
IT 93228-98-9, Silumin
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Al-Si alloy, thermal cond. plate; insulated semiconductor devices provided in decreased thermal stress and strain)
IT 177413-55-7, Aluminum 78.5, magnesium 1.5, silicon 20
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**ceramic**-dispersed **metal** plate/conductor; insulated semiconductor devices provided in decreased thermal stress and strain)
IT 409-21-2, Silicon carbide, properties
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(composite substrate; insulated semiconductor devices provided in decreased thermal stress and strain)
IT 12033-89-5, Silicon nitride, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(insulative substrate; insulated semiconductor devices provided in decreased thermal stress and strain)
IT 7440-02-0, Nickel, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(plated **circuit** layer; insulated semiconductor devices provided in decreased thermal stress and strain)

L69 ANSWER 3 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:964422 HCAPLUS
DN 138:48464
TI Nanocomposite dielectrics and their uses
IN Glatkowski, Paul J.; Arthur, David J.
PA Eikos, Inc., USA
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08J009-32
CC 76-10 (Electric Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002100931	A1	20021219	WO 2002-US17891	20020610

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

	US 2003008123	A1	20030109	US 2002-165306	20020610
PRAI	US 2001-296480P	P	20010608		

AB The dielec. const. is increased by dispersion of carbon nanotubes in polymers. The carbon nanotubes are optionally coated with metals such as Ag, Au, Ni, Al, or their mixts., optionally mixed with a conductive filler such as Ag, Ni-coated graphite, metal-coated glass beads, **metal-coated** hollow glass or **ceramic** spheres, Cu, stainless

steel fibers, carbon black, Au, Al, or their mixts., and optionally oriented parallel to the elec. field of the nanocomposite. The nanotubes are optionally mixed with inorg. dielec. particles or coated with org. mols. to increase the vol. resistivity. These composites are useful as high-energy-d. capacitors and antennas. These composites may be laminated with metals such as Cu and reinforced with glass fabric for incorporation into a multilayer **circuit** to form an embedded capacitor.

ST composite carbon nanotube polymer high energy density capacitor; glass fabric reinforced carbon nanotube polymer composite; multilayer **circuit** carbon nanotube polymer composite; copper laminate carbon nanotube polymer composite; org mol coated carbon nanotube polymer composite; inorg filler carbon nanotube mixt polymer composite; conductive filler carbon nanotube mixt polymer composite; antenna polymer carbon nanotube composite; dielec const enhanced polymer carbon nanotube filler; metal coated carbon nanotube polymer composite

IT Capacitors
(high-energy-d.; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Glass spheres
RL: MOA (Modifier or additive use); USES (Uses)
(hollow glass spheres, metal-coated, supplementary cond. filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Laminated plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(metal laminates of nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors in multilayer **circuits**)

IT Glass beads
RL: MOA (Modifier or additive use); USES (Uses)
(metal-coated, supplementary cond. filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Antennas
Integrated **circuits**
Nanocomposites
Nanotubes
(nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Acrylic polymers, uses
Epoxy resins, uses
Fluoropolymers, uses
Polycarbonates, uses
Polycyanurates
Polyesters, uses
Polyimides, uses
Polymer blends
Polysiloxanes, uses
Polyurethanes, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Metals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(nanotube coating and nanocomposite laminating materials; nanocomposites with increase dielec. const. based on carbon nanotubes

dispersed in polymers for high-energy-d. capacitors and antennas)

IT Alloys, uses
Organic compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
(nanotube coating; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Glass fiber fabrics
RL: TEM (Technical or engineered material use); USES (Uses)
(reinforcing materials; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT **Ceramics**
(spheres, hollow, **metal-coated**, supplementary cond. filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Metallic fibers
RL: MOA (Modifier or additive use); USES (Uses)
(stainless steel, supplementary cond. filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(supplementary cond. filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT Inorganic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(supplementary filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT 12597-68-1, Stainless steel, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fibers, supplementary cond. filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-17-2, Polybutadiene
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses
RL: MOA (Modifier or additive use); USES (Uses)
(nanotube coating; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT 7440-44-0, Carbon, uses
RL: MOA (Modifier or additive use); USES (Uses)
(nanotubes; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers for high-energy-d. capacitors and antennas)

IT 7782-42-5, Graphite, uses
RL: MOA (Modifier or additive use); USES (Uses)
(nickel-coated, supplementary cond. filler; nanocomposites with increase dielec. const. based on carbon nanotubes dispersed in polymers

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        for high-energy-d. capacitors and antennas)
RE.CNT  9      THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Crowley; US 6038060 A 2000
(2) Glatkowski; US 6265466 B1 2001 HCAPLUS
(3) Horcom Limited; EP 0949199 A1 1999 HCAPLUS
(4) Jin; US 6250984 B1 2001 HCAPLUS
(5) Jin; US 6283812 B1 2001 HCAPLUS
(6) Niu; US 6205016 B1 2001 HCAPLUS
(7) Ren; WO 9965821 A1 1999 HCAPLUS
(8) Taylor-Smith; US 5965202 A 1999 HCAPLUS
(9) Tennent; US 6031711 A 2000 HCAPLUS

L69  ANSWER 4 OF 53  HCAPLUS  COPYRIGHT 2003 ACS
AN   2002:575584  HCAPLUS
DN   137:143931
TI   Multilayer metalized coating with a polymer interlayer for corrosion
     resistance and a polished finish
IN   Mayzel, Alexander
PA   USA
SO   U.S. Pat. Appl. Publ., 6 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  B05D001-36
     ICS  B05D001-04; B05D001-18; C23C016-00; B32B009-00
NCL  428447000
CC   56-6 (Nonferrous Metals and Alloys)
     Section cross-reference(s): 42, 57
FAN.CNT 1
     PATENT NO.         KIND  DATE           APPLICATION NO.   DATE
     ---------------    ----  --------       ---------------   --------
PI   US 2002102416      A1    20020801       US 2001-773233    20010131
     WO 2002060685      A1    20020808       WO 2001-US45692   20011031
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,
             PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,
             UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI US 2001-773233     A     20010131
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AB The **metal, ceramic**, or glass substrates are coated with: (a) polymer base layer for a smooth surface; (b) atomized or vapor-deposited metal interlayer; (c) corrosion-resistant inorg. or metal coating; and (d) transparent top coating for protective layer. The metal substrates are optionally precoated with Zr-conversion primer before applying the polymer base layer. The corrosion-resistant **coating** is **selected** from Al, Cd, Co, Cs, Cu, Mn, Mo, Ni, Si, Ti, Zn, and/or Zr, esp. as an oxide or stable salt. The top layer is preferably based on transparent org., ceramic, or **polysiloxane** coating. The multilayer coating has a polished effect and improved corrosion resistance, and can be applied with Al interlayer on Al-alloy articles to replace conventional Cr coating.

ST metalized polymer multilayer anticorrosion coating; aluminum alloy polymer metalized bright coating

IT Cast alloys
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process)
(aluminum, coating of; metalized coating with polymer interlayer for corrosion resistance and hard finish)
IT Coating materials
(anticorrosive, multilayer; metalized coating with polymer interlayer for corrosion resistance and hard finish)
IT Wheels
(automotive, cast, coating of; metalized coating with polymer interlayer for corrosion resistance and hard finish)
IT **Ceramics**
(coating of; **metalized** coating with polymer interlayer for corrosion resistance and hard finish)
IT **Polysiloxanes,** uses
RL: MOA (Modifier or additive use); USES (Uses)
(coating with; metalized coating with polymer interlayer for corrosion resistance and hard finish)
IT Polymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(interlayer, coating with; metalized coating with polymer interlayer for corrosion resistance and hard finish)
IT Coating materials
(multilayer; metalized coating with polymer interlayer for corrosion resistance and hard finish)
IT Epoxy resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(primer, coating with; metalized coating with polymer interlayer for corrosion resistance and hard finish)
IT 7429-90-5, Aluminum, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-43-9, Cadmium, uses 7440-46-2, Cesium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(interlayer, multilayer coating contg.; metalized coating with polymer interlayer for corrosion resistance and hard finish)

L69 ANSWER 5 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:39536 HCAPLUS
DN 136:87314
TI Pipe insulation with a jacket measured in fractions of an inch
IN Williams, David R.
PA USA
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM F16L009-14
NCL 138149000
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38, 57
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6338366	B1	20020115	US 2001-757482	20010111
PRAI	US 2001-757482		20010111		

AB A pipe insulating jacket measured in fractions of an inch comprises a thin

flexible sheet having an inside surface and an outside surface adapted to surround and conform to a pipe; and a thin ceramic coating deposited on .gtoreq.1 of the inside and outside surfaces of the sheet, wherein the **coating** contains resins **selected** from the group
consisting of aliph. urethanes, acrylic, silicones, and mixts. thereof. The thin ceramic-coated jacket can be attached to a pipe or pipe fitting by fasteners to form an environmentally safe pipe insulator and fire preventive jacket.

ST pipe jacket thin ceramic coating; fire resistance ceramic coating jacket pipe; hot fluid pipe jacket coating

IT Polyurethanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aliph., coating; thin ceramic-coated insulating jackets for pipes)

IT Perlite
RL: TEM (Technical or engineered material use); USES (Uses)
(ceramic coatings; thin ceramic-coated insulating jackets for pipes)

IT Acrylic polymers, uses
Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; thin ceramic-coated insulating jackets for pipes)

IT Coating materials
(fire-resistant; thin ceramic-coated insulating jackets for pipes)

IT Glass fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(flexible sheets; thin ceramic-coated insulating jackets for pipes)

IT **Metals**, uses
Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(pipe; thin **ceramic**-coated insulating jackets for pipes)

IT Pipes and Tubes
Thermal barrier coatings
(thin ceramic-coated insulating jackets for pipes)

IT Ceramic coatings
(water-based; thin ceramic-coated insulating jackets for pipes)

IT 1335-30-4, Aluminum silicate
RL: TEM (Technical or engineered material use); USES (Uses)
(hydrous, ceramic coatings; thin ceramic-coated insulating jackets for pipes)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Almeida; US 5771941 A 1998
(2) Botsolas; US 4054711 A 1977 HCAPLUS
(3) Edridge; US 4161510 A 1979 HCAPLUS
(4) Erickson; US 4530884 A 1985
(5) Hamling; US 3875971 A 1975 HCAPLUS
(6) Heckel; US 4271218 A 1981
(7) Hiraide; US 5660211 A 1997
(8) Hyodo; US 4600312 A 1986
(9) Iida; US 3815640 A 1974
(10) Kristensson; US 4485057 A 1984
(11) Noda; US 3891009 A 1975
(12) Noda; US 3958582 A 1976 HCAPLUS
(13) Noone; US 6004626 A 1999
(14) Patell; US 4640312 A 1987
(15) Petronko; US 4925605 A 1990
(16) Shannon; US 3628572 A 1971
(17) Stiles; US 5400830 A 1995
(18) Usui; US 6030672 A 2000

(19) Wolf; US 5816043 A 1998
(20) Zemanek; US 5017314 A 1991

L69 ANSWER 6 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 2002-657316 [70] WPIX
DNN N2002-519758 DNC C2002-184328
TI Formation of resist image on microelectronic substrate for manufacture of semiconductor devices, involves contacting substrate with compositions comprising carbon dioxide, to form coating, and developing.
DC A89 G06 L03 P84 U11
IN CARBONELL, R G; DESIMONE, J M; KENDALL, J; MCADAMS, C L
PA (UYNC-N) UNIV NORTH CAROLINA; (UYNC-N) UNIV NORTH CAROLINA STATE; (CARB-I) CARBONELL R G; (DESI-I) DESIMONE J M; (KEND-I) KENDALL J; (MCAD-I) MCADAMS C L
CYC 28
PI WO 2002031596 A1 20020418 (200270)* EN 49p G03F007-004
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
W: AU BR CA CN DE ES GB JP KR MX SG
AU 2001096737 A 20020422 (200270) G03F007-004
US 2002119398 A1 20020829 (200270) G03F007-00
ADT WO 2002031596 A1 WO 2001-US31504 20011010; AU 2001096737 A AU 2001-96737 20011010; US 2002119398 A1 Provisional US 2000-239749P 20001012, Provisional US 2001-267993P 20010209, US 2001-975211 20011010
FDT AU 2001096737 A Based on WO 200231596
PRAI US 2001-267993P 20010209; US 2000-239749P 20001012; US 2001-975211 20011010
IC ICM G03F007-00; G03F007-004
ICS G03F007-26; G03F007-36
AB WO 200231596 A UPAB: 20021031
NOVELTY - A microelectronic substrate is contacted with a first composition, to deposit a specific component of the composition on the substrate. A coating formed is imagewise exposed to radiation, and then contacted with a second composition such that either exposed or unexposed coating portion formed is removed from the substrate and the other coating portion is developed to form a resist image on the substrate.

DETAILED DESCRIPTION - A microelectronic substrate is contacted with a first composition comprising carbon dioxide and a component chosen from polymeric precursor(s), monomer(s) and/or polymeric material(s), to deposit the component on the substrate and form a coating. The coating is imagewise exposed to radiation such that exposed and unexposed coating portions are formed. The coating is then contacted with a second composition comprising carbon dioxide such that either exposed or unexposed coating portion is removed from the substrate and the other coating portion is developed and remains on the coating to form a resist image on the substrate.

An INDEPENDENT CLAIM is also included for formation of integrated **circuits** which involves forming the resist image on wafer(s), depositing a metal-containing or an ionic material on the surface of the wafer from which the exposed or unexposed coating portions are removed, and then removing the exposed or unexposed coating portions from the wafer. Formation of integrated **circuit** is performed in integrated microelectronic processed device (IMPD) without removing wafer from IMPD.

USE - For forming a resist image in a microelectronic device such as an integrated **circuit** and in manufacture of semiconductor devices and for other non-lithographic processes in which a polymer must be deposited and removed from a surface in controlled fashion (example, coating of dielectric with low dielectric constants, coating on solid

substrates, fiber optics, optical components, glass, **ceramics**, **metal** and plastics.

ADVANTAGE - Formation of semiconductor devices by depositing, developing and stripping resists in an integrated closed system which uses solvent, e.g., carbon dioxide, is enabled. Thereby, repeated entry, removal and re-entry steps that are inherent in non-integrated processes, are reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the phase diagram for a negative resist (base resist) before and after exposure to radiation.

Dwg.1/4

FS CPI EPI GMPI
FA AB; GI
MC CPI: A08-S02; A11-B05C; A11-B05D; A12-E07C; A12-L02B2; G06-D06; G06-E04; G06-F03C; G06-F03D; L04-C06B1
EPI: U11-C04A; U11-C07D

L69 ANSWER 7 OF 53 HCAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
AN 2001:12151 HCAPLUS
DN 134:75129
TI Procedure for **selective coating** of **ceramic** surfaces
IN Roethlingshoefer, Walter; Boehm, Manfred
PA Robert Bosch G.m.b.H., Germany
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C04B041-84
CC 57-2 (Ceramics)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19930782	A1	20010104	DE 1999-19930782	19990703
	JP 2003504846	T2	20030204	JP 2001-508489	20000621
PRAI	DE 1999-19930782	A	19990703		
	WO 2000-DE2023	W	20000621		

AB Side surfaces of the Si-based **ceramic hybrid** substrate are esterified by dipping in or spraying with a soln. of a Si-contg. coordinated org. compd. esp. **siloxane**, and heat treated for 0.4-0.6 h at 1000. The org. soln. contains 0.1-1 vol.% of **siloxane** and isopropanol in the balance. The procedure is suitable in the manuf. of switching arrangements consisting of **ceramic hybrid** substrates and **metal** elec. conductors.
ST **coating ceramic** surface **siloxane hybrid elec switch**
IT **Ceramics**
(Si-based, **coating** of; **selective coating** of **ceramic** surfaces by **esterification** with **siloxane**)
IT **Polysiloxanes**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**coating** with; **selective coating** of **ceramic** surfaces by **esterification** with **siloxane**)
IT **Ceramic coatings**
(**esterification** with **siloxane**; **selective**

coating of **ceramic** surfaces by **esterification** with **siloxane**)

IT **Electric switches**
(**hybrid ceramic-metal; selective coating** of **ceramic** surfaces by **esterification** with **siloxane**)

IT Integrated **circuits**
(**hybrid, coating** of **ceramic** surfaces; **selective coating** of **ceramic** surfaces by **esterification** with **siloxane**)

IT **Coating** materials
(**siloxane; selective coating** of **ceramic** surfaces by **esterification** with **siloxane**)

L69 ANSWER 8 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:780816 HCAPLUS
DN 135:321798
TI Coated glass plates with improved surface strength for displays, CD, **electric switches**, reflectors, or photodetectors
IN Weber, Andreas; Buerkle, Roland; Deutschbein, Silke; Habeck, Andreas; Mauch, Reiner
PA Schott Glas, Germany
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM C03C017-22
ICS C03C017-28
CC 57-1 (Ceramics)
Section cross-reference(s): 74, 76, 77
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001079128	A2	20011025	WO 2001-EP3892	20010405

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	DE 10019355	A1	20011031	DE 2000-10019355	20000418
	EP 1274659	A1	20030115	EP 2001-936193	20010405

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI DE 2000-10019355 A 20000418
WO 2001-EP3892 W 20010405

AB The glass articles consist of a glass substrate of 10-1500 .mu.m thick and .gtoreq.1 coating resistant to compressive or tensile stresses of 100-1000 MPa. The glass substrate (e.g., alkali-free borosilicate glass) is a flat or bent glass plate or a glass vessel. The coating layers are deposited by dipping, rolling on, spraying, and sol-gel processing of polymers, inorg. materials, **metals**, or org.-modified **ceramics**, e.g., **metal** oxides, nitrides, carbonitrides, oxynitrides, oxycarbides, semiconductors, or mixts. thereof. Some volatile organometal

compds. can be used as coating precursors. The coating can be also deposited by heat, electro-magnetic, UV, UV/ozone, electrone beam, crown discharge, vacuum evapn., magnetron sputtering, or arc-plasma treatment. Coating on one side of the glass plate can work as a diffusion barrier, a polarizer, a reflector, a photodetector, or an information storage.

ST glass **coating** polymer **metal ceramic metalorg**; display hard disk **elec switcher** glass coating

IT Borosilicate glasses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(alkali-free, AF 37, AF 45, D 263; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT **Polysiloxanes,** processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(alkylphenyl, Silres, glass coating with; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT Vapor deposition process
(electron-beam, glass coating by; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT Magnetron sputtering
(glass coating by; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT Epoxy resins, processes
Polyurethanes, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(glass coating with; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT **Electric switches**
Mirrors
Optical reflectors
Photometers
(glass, hard coating on; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT Glass substrates
Optical ROM disks
Optical imaging devices
(hard coating on; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT Ceramics
Compressive strength
Diffusion barrier
Magnetooptical recording
Polarizing films
Semiconductor materials
Tensile strength
(hard films on glass; coated glass plates with improved surface strength for displays, CD, **elec. switchers,** reflectors or photodetectors)

IT Carbonitrides
Nitrides
Oxides (inorganic), processes
Oxynitrides
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(hard films on glass; coated glass plates with improved surface strength for displays, CD, **elec. switchers**, reflectors or photodetectors)
IT Carbides
Oxides (inorganic), processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(oxycarbides, hard films on glass; coated glass plates with improved surface strength for displays, CD, **elec. switchers**, reflectors or photodetectors)
IT 9016-00-6, Poly[oxy(dimethylsilylene)]
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(Elastosil, glass coating with; coated glass plates with improved surface strength for displays, CD, **elec. switchers**, reflectors or photodetectors)
IT 75-76-3, Tetramethyl silane 107-46-0, Hexamethyl disiloxane 9002-89-5, Mowiol 9003-01-4, Polyacrylic acid 87335-95-3, Stycast 1269A 198223-80-2 367942-19-6, Hydroglasur
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(glass coating with; coated glass plates with improved surface strength for displays, CD, **elec. switchers**, reflectors or photodetectors)
IT 367942-07-2, Coetrans
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(lacquer, glass coating with; coated glass plates with improved surface strength for displays, CD, **elec. switchers**, reflectors or photodetectors)
IT 1344-28-1, Alumina, processes 7440-47-3, Chromium, processes 14808-60-7, Quartz, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(magnetron sputtering target for glass coating; coated glass plates with improved surface strength for displays, CD, **elec. switchers**, reflectors or photodetectors)
IT 7803-62-5, Silane, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(plasma feed gas for glass coating; coated glass plates with improved surface strength for displays, CD, **elec. switchers**, reflectors or photodetectors)

L69 ANSWER 9 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:598421 HCAPLUS
DN 135:156301
TI Optimized insulation coatings for attenuation of thermal sensation in manual handling of heat-generating equipment
IN Lewis, David Andrew; Mok, Lawrence Shungwei
PA USA
SO U.S. Pat. Appl. Publ., 19 pp., Division of U.S. Ser. No. 966,168.

CODEN: USXXCO
DT Patent
LA English
IC ICM B32B015-08
ICS B05D005-00; B32B015-04; B32B027-40
NCL 428332000
CC 56-6 (Nonferrous Metals and Alloys)
Section cross-reference(s): 38, 76
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2001014390	A1	20010816	US 2001-779043	20010208
	US 6428886	B1	20020806	US 1997-966168	19971107
PRAI	US 1997-48279P	P	19970602		
	US 1997-966168	A3	19971107		
	US 1997-6758P	P	19970602		

AB The heat-generating portable (esp. electronic) app. is precoated to attenuate contact temp. and thermal sensation in manual handling. The substrate for manual handling is precoated with an insulating layer having optimized d., thermal cond., and thickness to decrease the surface temp. toward the body temp. of .apprx.32.degree. in the initial handling, vs. nominally .ltoreq.60.degree. as the equil. design temp. assocd. with **elec.-circuit** heat generation. The suitable insulating coating is 0.1-3 mm thick with the d. of 0.05-1.2 g/cm3 and thermal cond. of 0.02-0.15 W/m-degree. The coating is typically based on foamed polymer, low-d. inorg. material, or a polymer composite filled with hollow microbeads. The coating attenuates a steady-state thermal transfer from the heated substrate, in comparison with a bare **metal** or **ceramic** substrate. The Al sheet 1.2 mm thick as a common outer surface in boxed app. with heat-generated temp. of .apprx.60.degree. was coated with polyurethane foam 0.6 mm thick and having the d. of 0.3 g/cm3 and thermal cond. of 0.05 W/m-degree, resulting in the hand-contact temp. decreasing to .apprx.37.degree. to prevent handling discomfort.
ST electronic heated app coating thermal insulation handling comfort; polymer foam coating heated app handling comfort
IT Electric apparatus
(coating of, for contact-temp. control; insulation coatings for decreased thermal sensation in handling of heated app.)
IT Epoxy resins, uses
Phenolic resins, uses
Polymers, uses
Polysiloxanes, uses
Polyurethanes, uses
Synthetic rubber, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(foamed, coating with; insulation coatings for decreased thermal sensation in handling of heated app.)
IT Thermal barrier coatings
(for contact-temp. control; insulation coatings for decreased thermal sensation in handling of heated app.)
IT Temperature
(manual contact; insulation coatings for decreased thermal sensation in handling of heated app.)
IT 7429-90-5, Aluminum, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coating of, for contact-temp. control; insulation coatings for decreased thermal sensation in handling of heated app.)
IT 9003-53-6, Polystyrene

RL: TEM (Technical or engineered material use); USES (Uses)
(foamed, coating with; insulation coatings for decreased thermal sensation in handling of heated app.)

L69 ANSWER 10 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 2001-407824 [43] WPIX
DNN N2001-301762 DNC C2001-123452
TI Moisture-resistant, thermally-conductive material useful for removing heat in electronic devices comprises a particulate filler e.g. boron nitride with a hydrophobic coating, and a binder.
DC A85 E11 L03 P73 U11 V04
IN BOWSER, S E; CLERE, T M
PA (COMP) SAINT-GOBAIN IND CERAMICS INC; (COMP) SAINT-GOBAIN CERAMICS & PLASTICS INC
CYC 93
PI WO 2001021393 A1 20010329 (200143)* EN 26p B32B005-16
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2001038868 A 20010424 (200143) B32B005-16
GB 2370040 A 20020619 (200240) B32B005-16
DE 10085011 T 20030116 (200313) B32B005-16
JP 2003509578 W 20030311 (200319) 29p C08L101-00
ADT WO 2001021393 A1 WO 2000-US25811 20000920; AU 2001038868 A AU 2001-38868 20000920; GB 2370040 A WO 2000-US25811 20000920, GB 2002-4971 20020304; DE 10085011 T DE 2000-10085011 20000920, WO 2000-US25811 20000920; JP 2003509578 W WO 2000-US25811 20000920, JP 2001-524797 20000920
FDT AU 2001038868 A Based on WO 200121393; GB 2370040 A Based on WO 200121393; DE 10085011 T Based on WO 200121393; JP 2003509578 W Based on WO 200121393
PRAI US 1999-400169 19990921
IC ICM B32B005-16; C08L101-00
ICS C08K005-5415; C08K009-04; C08K009-06; C08K009-08; C09K005-08; **H01L023-28**; H05K001-03; H05K003-00
AB WO 200121393 A UPAB: 20010801
NOVELTY - A moisture-resistant, thermally-conductive material comprises:
(i) a particulate filler comprising thermally-conductive particles having a hydrophobic coating and
(ii) a binder for the particles.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) An interface material comprising 5-40 vol.% of the particles.
(2) A potting compound comprising 20-70 vol.% of the particles.
(3) An electronic apparatus comprising a heat source and a **circuit** board comprising the potting compound.
(4) An electronic apparatus comprising a heat source and a heat sink separated by a layer of the moisture-resistant, thermally-conductive material.
USE - The thermally-conductive material is used as a potting compound or interface material to remove heat from electronic devices such as integrated **circuit** chips (claimed).
ADVANTAGE - The hydrophobic coating maintains the thermal conductivity of the material regardless of atmospheric relative humidity.
Dwg.0/1
FS CPI EPI GMPI
FA AB; DCN
MC CPI: A08-M09C; A08-R01; A09-A01A; A12-E01; A12-W12G; E05-A; E05-B01;

E05-B03; E05-E01; E05-E02; E05-M; E06-B01; E06-D09; E07-D08;
E10-A09B6; E10-A16B; E31-D04; E31-H05; E31-K05; E31-K06; E31-M;
E31-N04C; E31-N04D; E31-N05D; E31-P02B; E31-P02D; E31-P03; E31-P05;
E31-P06C; E31-P06D; E31-Q03; E31-Q08; E34; E35; L03-G; L04-C25
EPI: U11-D02B2; U11-D03B3; V04-T03

L69 ANSWER 11 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 2001-417445 [44] WPIX
CR 1999-468954 [39]
DNN N2001-309340 DNC C2001-126030
TI Printing member used in a plateless offset printing system.
DC A97 G05 P74 P75
IN BEN-HORIN, N; FIGOV, M
PA (SCIT-N) SCITEX CORP LTD
CYC 95
PI WO 2001019613 A1 20010322 (200144)* EN 50p B41C001-10
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000070381 A 20010417 (200144) B41C001-10
EP 1220750 A1 20020710 (200253) EN B41C001-10
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
RO SE SI
ADT WO 2001019613 A1 WO 2000-IL570 20000914; AU 2000070381 A AU 2000-70381
20000914; EP 1220750 A1 EP 2000-958978 20000914, WO 2000-IL570 20000914
FDT AU 2000070381 A Based on WO 200119613; EP 1220750 A1 Based on WO 200119613
PRAI US 1999-396036 19990915
IC ICM B41C001-10
ICS B41N001-08; B41N001-14
AB WO 200119613 A UPAB: 20020823
NOVELTY - A printing member (A) comprises an image bearing cylinder having a single imaging layer **coated** thereon. On **selective** ablation, polymerization or decomposition of the imaging layer, selective areas of the imaging layer are removed to expose the cylinder. The cylinder and the coated imaging layer are configured to have opposed chemical affinities w.r.t. water and/or ink.

DETAILED DESCRIPTION - A printing member (A) comprises an image bearing cylinder having a single imaging layer **coated** thereon. On **selective** ablation, polymerization or decomposition of the imaging layer, selective areas of the imaging layer are removed to expose the cylinder. The cylinder and the coated imaging layer are configured to have opposed chemical affinities w.r.t. water and/or ink.

INDEPENDENT CLAIMS are also included for:

(1) a printing member (B) comprising an oleophobic single coating imaging layer containing a silicone polymer and an IR absorbing material and having an oleophilic substrate underlying it;

(2) a printing system comprising the above printing member, an imaging system and an inking assembly;

(3) preparation of the printing member;

(4) a method of imaging the printing member;

(5) a computer to plate system (C) which includes the imaging system; and

(6) a digital waterless processless plate having a single imaging layer.

USE - A plateless offset printing system.

ADVANTAGE - The imaging layer has good release properties, high scratch resistance and excellent substrate adhesion. There is no need for a pre-coat or primer.
Dwg.0/5

FS CPI GMPI
FA AB
MC CPI: A06-A00E4; A12-L02B1; A12-W07B; G05-A; G05-A01; G06-D05; G06-F03C; G06-F03D

L69 ANSWER 12 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 2002-040117 [05] WPIX
DNN N2002-029646 DNC C2002-011386
TI Ball grid array interconnection structure, comprises spheres joined to module by electrically conductive adhesive comprising thermoplastic or thermosetting resin matrix, no-clean solder flux and conductive particles.
DC A85 L03 U11
IN CALL, A J; DELAURENTIS, S A; FAROOQ, S; KANG, S K; PURUSHOTHAMAN, S; STALTER, K A
PA (IBMC) INT BUSINESS MACHINES CORP
CYC 1
PI US 6297559 B1 20011002 (200205)* 10p H01L023-48 <--
ADT US 6297559 B1 Provisional US 1997-52175P 19970710, US 1998-107998 19980630
PRAI US 1997-52175P 19970710; US 1998-107998 19980630
IC ICM **H01L023-48**
AB US 6297559 B UPAB: 20020123

NOVELTY - Ball grid array structure has electrically conductive spheres joined to a chip carrier module by electrically conductive adhesive (ECA) and printed wiring board by solder paste respectively. ECA contains thermoplastic/thermosetting polymer resin matrix, no-clean solder flux and electrically conductive particles (EP) having electrically conductive fusible coating. Some EP are fused through the coating.

DETAILED DESCRIPTION - Ball gid array structure comprises an array of electrically conductive spheres (34), disposed on an electronic chip carrier module (31). The spheres are electrically and mechanically joined to terminal pads on the module by an electrically conductive adhesive (33). The spheres are electrically and mechanically joined to printed **circuit** board (36) by solder paste (35). The conductive adhesive comprises thermoplastic or thermosetting polymer resin matrix, no-clean solder flux and several electrically conductive particles. The electrically conductive particles are coated by electrically conductive and fusible coating. At least some of conductive particles are fused with each other through electrically conductive fusible coating.

USE - For interconnecting micro-**electronic** packages and printed **circuit** boards.

ADVANTAGE - The structure such as ball grid array package (BGA) has longer fatigue life. The structure provides stronger and compliant interconnections of ball grid array package to ceramic or plastic substrates. BGA structure is stable and does not cause an excessive inter diffusion between solder ball and adjoining solder paste.

DESCRIPTION OF DRAWING(S) - The figures show the schematic cross-sectional representation of new solder ball connection scheme in ceramic ball grid array package.

Module 31
Electrically conductive adhesive 33
Spheres 34
Solder paste 35
Printed **circuit** board 36
Dwg.3, 5/5

FS CPI EPI
FA AB; GI
MC CPI: A08-M09A; A09-A03; A11-C01C; A12-E07A; A12-E07C; L04-C17A
EPI: U11-D03A

L69 ANSWER 13 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 2002-000871 [01] WPIX
DNC C2002-000427
TI Mono- and bi-functional (per)fluoropolyether derivative used for removing stains of coffee, wine, coca-cola in ceramic materials.
DC A25 A82 G02 L02
IN CARIGNANO, G; DE DOMINICIS, M; DOMINICIS, M D
PA (AUSY) AUSIMONT SPA
CYC 27
PI EP 1130005 A2 20010905 (200201)* EN 10p C04B041-82 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 2001025095 A1 20010927 (200201) C08G077-00
ADT EP 1130005 A2 EP 2001-103316 20010213; US 2001025095 A1 US 2001-794090 20010228
PRAI IT 2000-MI379 20000229
IC ICM **C04B041-82**; C08G077-00
ICS C08G065-00; C08G079-02
AB EP 1130005 A UPAB: 20020105
NOVELTY - The mono- and bi-functional (per)fluoropolyether derivative used for removing stains from ceramic materials, has specific formulae.

DETAILED DESCRIPTION - The mono- and bi-functional (per)fluoropolyether derivative is represented by formulae (A-D).

(Rf-CFY-L-O)mP(O)(O-Z+3-m (A)

(O-Z+)2P(O)(O-L-YFC-O-Rf-CFY-L-O-P(O)(O-Z+))m'-(O-L-YFC-O-Rf-CFY-L-O)P(O)(O-Z+)2 (B)

Rf-CFY-L-W (C)

W-L-YFC-O-Rf-CFY-L-W (D)

m' = 0-20, preferably 0-4;
L = -CH2-(OCH2CH2)n-, -CO-NR'-(CH2)q-;
n = 0-8, preferably 1-3;
q = 1-8, preferably 1-3;
Z = H, alkaline metal or NR4;
R,R' = H or 1-4C alkyl;
m = 1-3, preferably 1 or 2;
W = -Si(R1) alpha (OR2)3- alpha (I); alpha = 0-2;
R1,R2 = same or different and are 1-6C alkyl, optionally containing one or more ether oxygen, 6-10C aryl, 7-12C alkyl-aryl or aryl-alkyl;
Rf = at least one repeat unit selected from (CFXO) (Ia), (CF2CF2O) (Ib), (CF2CF2CF2O) (Ic), (CF2CF2CF2CF2O) (Id), (CR4R5CF2CF2O) (Ie), (CF(CF3)CF2O) (If), and (CF2CF(CF3)O) (Ig) and has number average molecular weight of 350-8000, preferably 500-3000;
X,Y = F, CF3; R4,R5 = same or different and are H, Cl or 1-4C perfluoroalkyl

USE - For removing stains of wine, coffee, coca-cola, vinegar, marking pens, potassium permanganate, iodine tincture, sealing agents from ceramic material, such as porcelainized gres.

ADVANTAGE - The (per)fluoropolyether compounds easily remove the stains from ceramic material surface. The use of polymer film coatings for removing the stains are eliminated. The durability of the protective treatment is desirable, for six months.
Dwg.0/0
FS CPI

```
FA   AB
MC   CPI: A10-E01; A12-B08; G02-A05; L02-G; L02-G02; L02-G03A

L69  ANSWER 14 OF 53  HCAPLUS  COPYRIGHT 2003 ACS
AN   2000:814572  HCAPLUS
DN   133:351603
TI   Ceramic fine powder-containing coatings and adhesives
IN   Tada, Yukinobu; Haruyama, Shunichi
PA   Japan
SO   PCT Int. Appl., 37 pp.
     CODEN: PIXXD2
DT   Patent
LA   Japanese
IC   ICM  C09D007-12
     ICS  C09D011-04; C09D201-00; C09J201-00; C09D175-00; C09J175-00
CC   42-10 (Coatings, Inks, and Related Products)
     Section cross-reference(s): 38
FAN.CNT 3
     PATENT NO.         KIND  DATE           APPLICATION NO.  DATE
     ---------------    ----  --------       ---------------  --------
PI   WO 2000068328      A1    20001116       WO 1999-JP2392   19990510
         W:  AU, BR, CA, CN, CU, CZ, ID, IL, IN, IS, JP, KR, LK, MX, NO, NZ,
             PL, SG, SK, TR, UA, US, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
             ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
             CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     AU 9936294         A1    20001121       AU 1999-36294    19990510
     WO 2000068330      A1    20001116       WO 2000-JP2941   20000508
         W:  AU, BR, CA, CN, CU, CZ, ID, IL, IN, IS, JP, KR, LK, MX, NO, NZ,
             PL, SG, SK, TR, UA, US, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
             DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
             CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
PRAI WO 1999-JP2392     A     19990510
     JP 2000-32088      A     20000209
AB   Title coatings or coatable adhesives, showing good adhesion and good
     chem., corrosion, heat, scratch, and soil resistance, contain film-forming
     components and .ltoreq.1-.mu.m ceramic powders.  A com. shellac varnish
     was mixed with 1-30% 10-nm SiO2 and coated on a wood panel to form a
     transparent glassy surface.  A com. poly(vinyl butyral)/phenolic resin
     coating was mixed with 1-10% 7-nm sintered Al2O3 particles and spread on
     an Al plate to form a scratch-resistant surface.
ST   ceramic fine powder polymer binder coating; curable polymer adhesive fine
     ceramic powder; scratch resistance coating fine ceramic
     powder; chem resistance coating fine ceramic powder;
     soil resistance coating fine ceramic powder; corrosion
     resistance coating fine ceramic powder; heat
     resistance coating fine ceramic powder
IT   Epoxy resins, uses
     RL: POF (Polymer in formulation); TEM (Technical or engineered material
     use); USES (Uses)
        (acrylates; fine ceramic powder-contg. polymer binder-based coatings or
        adhesives)
IT   Aminoplasts
     RL: POF (Polymer in formulation); TEM (Technical or engineered material
     use); USES (Uses)
        (alkyd resin blends; fine ceramic powder-contg. polymer binder-based
        coatings or adhesives)
```

IT Shellac
(**coatings;** fine **ceramic** powder-contg. polymer
binder-based coatings or adhesives)
IT Glass fibers, miscellaneous
RL: MSC (Miscellaneous)
(epoxy resin composite, substrates; fine ceramic powder-contg. polymer
binder-based coatings or adhesives)
IT **Polysiloxanes,** uses
Polysiloxanes, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material
use); USES (Uses)
(epoxy; fine ceramic powder-contg. polymer binder-based coatings or
adhesives)
IT Adhesives
Ceramics
Coating materials
Glass substrates
(fine **ceramic** powder-contg. polymer binder-based coatings or
adhesives)
IT Phenolic resins, uses
Polyurethanes, uses
Polyvinyl butyrals
RL: POF (Polymer in formulation); TEM (Technical or engineered material
use); USES (Uses)
(fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT Acrylic polymers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material
use); USES (Uses)
(lacquer; fine ceramic powder-contg. polymer binder-based coatings or
adhesives)
IT Epoxy resins, uses
Epoxy resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material
use); USES (Uses)
(**polysiloxane-**; fine ceramic powder-contg. polymer
binder-based coatings or adhesives)
IT Bricks
Concrete
Fiberboards
Heat exchangers
Mortar
Paperboard
Pipes and Tubes
Printed **circuit** boards
Tiles
Veneers
Wheels
Wood boards
(substrates; fine ceramic powder-contg. polymer binder-based coatings
or adhesives)
IT **Metals,** miscellaneous
Polysiloxanes, miscellaneous
RL: MSC (Miscellaneous)
(substrates; fine **ceramic** powder-contg. polymer binder-based
coatings or adhesives)
IT Dammar
(varnish; fine ceramic powder-contg. polymer binder-based coatings or
adhesives)

IT Alkyd resins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(varnish; fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT 1344-95-2, Calcium silicate
RL: MSC (Miscellaneous)
(boards, substrates; fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT 12597-68-1, Stainless steel, miscellaneous
RL: MSC (Miscellaneous)
(fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT 9003-22-9, Vinyl chloride-vinyl acetate copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT 13463-67-7, Titania, uses
RL: MOA (Modifier or additive use); USES (Uses)
(photocatalyst; fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT 9004-70-0, Nitrocellulose
RL: TEM (Technical or engineered material use); USES (Uses)
(poly(vinyl butyral) blends; fine ceramic powder-contg. polymer binder-based coatings or adhesives)
IT 7429-90-5, Aluminum, miscellaneous 9002-88-4, Polyethylene 9003-56-9, ABS polymer 12597-69-2, Steel, miscellaneous
RL: MSC (Miscellaneous)
(substrates; fine ceramic powder-contg. polymer binder-based coatings or adhesives)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Degussa Ag; JP 07165980 A 1995 HCAPLUS
(2) Nof Corp; JP 10120944 A 1998 HCAPLUS
(3) Pola Chemical Industries Inc; JP 04337364 A 1992 HCAPLUS
(4) Tonen Corp; JP 994525 A 1997

L69 ANSWER 15 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 2001-000392 [01] WPIX
DNN N2001-000252 DNC C2001-000102
TI Long-lasting and stable surface passivation of silicon devices such as solar cells and modules by wet application of a sol-gel coating to reduce surface recombination rate.
DC A26 A89 E11 G02 L03 U11 U12
IN HAESSLER, C; KRAUS, H; MAGER, M
PA (FARB) BAYER SOLAR GMBH; (DESO-N) DEUT SOLAR AG; (FARB) BAYER AG
CYC 92
PI DE 19916061 A1 20001012 (200101)* 7p C08G077-28
WO 2000061520 A1 20001019 (200101) DE C04B041-49 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000041118 A 20001114 (200108) C04B041-49 <--

DE 10080839 T 20021205 (200304) C04B041-49 <--
ADT DE 19916061 A1 DE 1999-19916061 19990409; WO 2000061520 A1 WO 2000-EP2712 20000328; AU 2000041118 A AU 2000-41118 20000328; DE 10080839 T DE 2000-10080839 20000328, WO 2000-EP2712 20000328
FDT AU 2000041118 A Based on WO 200061520; DE 10080839 T Based on WO 200061520
PRAI DE 1999-19916061 19990409
IC ICM **C04B041-49**; C08G077-28
ICS **C04B041-45**; C09D183-14; **H01L023-29**; **H01L031-18**
AB DE 19916061 A UPAB: 20001230
NOVELTY - A silicon article has a passivating surface coating of a sol-gel material.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM relates to the production of the coating by wet application of the sol-gel material to the optionally pre-treated silicon article.
USE - The silicon articles are used in solar cells or modules or in elements for electronics.
ADVANTAGE - The articles are given a relatively long-lasting and stable surface passivation without the disadvantages associated with prior-art high temperature processes. Typically the passivation lasts for at least a month as opposed to a period of only hours associated with wet-applied coatings based on iodine-containing rosin. Devices with the sol-gel coating show a surface recombination rate of only ca. 1,000 cm/s, compared to values of 105-106 for untreated silicon discs.
DESCRIPTION OF DRAWING(S) - The graph plots effective life (tau eff) against time in days as per the above Example, the unfilled delta showing the value for the untreated silicon disc.
Dwg.1/2
FS CPI EPI
FA AB; GI; DCN
MC CPI: A06-A00E; A06-A00E2; A12-E11; E31-P06A; G02-A05B; L03-E05B
EPI: U11-C05B9A; U12-A02A3; U12-A02A4D

L69 ANSWER 16 OF 53 COMPENDEX COPYRIGHT 2003 EEI DUPLICATE 2
AN 2000(33):1840 COMPENDEX
TI Preparation and properties of polysilsesquioxanes - preparation and properties of polymer hybrids from vinyltrimethoxysilane.
AU Takamura, Norihiro (Science Univ of Tokyo, Chiba, Jpn); Okonogi, Hiroshi; Gunji, Takahiro; Abe, Yoshimoto
SO Kobunshi Ronbunshu/Japanese Journal of Polymer Science and Technology v 57 n 4 2000.p 198-207
CODEN: KBRBA3 ISSN: 0386-2186
PY 2000
DT Journal
TC Experimental
LA Japanese
AB Polymer hybrids were prepared by radical polymerization of vinyltrimethoxysilane with t-butyl peroxide (DTBP) as an initiator followed by acid-catalyzed hydrolytic polycondensation to investigate the relationship between the structure of hybrids and the properties of the films.Radical polymerization of vinyltrimethoxysilane (VTS) with various molar ratios of DTBP to VTS provided polyvinyltrimethoxysilanes with different degrees of polymerization (DP equals 46 to approximately 74) which were hydrolyzed to prepare polyvinylpolysilsesquioxanes (PVPS) with various molecular weights (Mw equals 5000 to approximately 170000) and degrees of condensation of **siloxane** linkage (DC equals 7 to approximately 13*).Transparent, colorless and flexible free-standing films (thickness: 0.04 to approximately 0.07 mm) were prepared by casting PVPS

on the polymethylpentene shale followed by heating at 80 degree C for 10 days.Homogeneous, colorless and transparent **coating** films (thickness: 0.39 to approximately 0.56 mu m) were prepared by dipping the several organic, **metal** and **ceramic** substrates into 20 wt% acetone-methanol solution of PVPS. Mechanical properties of the free-standing films were measured and surface hardness and adhesion to the substrates of **coating** films were evaluated by pencil scratch test and cross-cut tape test, respectively, according to JIS K 5400.In the same way, the radical polymerization of methacryloxypropyltrimethoxysilane (MAS) followed by hydrolytic polycondensation provided transparent and colorless free-standing films (thickness: 0.02 to approximately 0.15 mm) and **coating** films (thickness: 1.23 to approximately 2.45 mu m) of polymethacryloxypropylpolysilsesquioxane (PMPS).(Author abstract) 48 Refs.

CC 817.1 Plastics Products; 815.1.2 Inorganic Polymers; 815.1.1 Organic Polymers; 815.2 Polymerization; 802.2 Chemical Reactions; 421 Strength of Building Materials. Mechanical Properties

CT *Plastic films; Hardness; Vinyl resins; Free radical polymerization; Polycondensation; Hydrolysis; Catalysis; Strength of materials; Polymer blends; Polysilanes

ST Polysilsesquioxane; Vinyltrimethoxysilane; Pencil scratch test; Cross-cut tape test

ET C; K

L69 ANSWER 17 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1999-217060 [19] WPIX
DNN N1999-159973 DNC C1999-064091
TI Curable silicone composition useful as adhesive or sealant in electronic component.
DC A26 A60 A85 G03 L03 U11
IN ISSHIKI, M; MINE, K; OTANI, Y; YAMAKAWA, K
PA (DOWO) DOW CORNING TORAY SILICONE ?
CYC 27
PI EP 908499 A1 19990414 (199919)* EN 15p C09J183-04
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 11181289 A 19990706 (199937) 9p C08L083-07
US 6225433 B1 20010501 (200126) C08G077-08
ADT EP 908499 A1 EP 1998-119254 19981013; JP 11181289 A JP 1997-316001 19971031; US 6225433 B1 US 1998-168811 19981008
PRAI JP 1997-316001 19971031; JP 1997-294911 19971013
IC ICM C08G077-08; C08L083-07; C09J183-04
ICS **H01L021-58; H01L023-29; H01L023-31**
ICI C08L083-07, C08L083:05
AB EP 908499 A UPAB: 19990518
NOVELTY - A curable silicone composition comprises an organopolysiloxane (I) containing silicon-(Si-) bonded aryl groups and at least two alkenyl groups per molecule, an organopolysiloxane (II) containing at least two silicon-bonded hydrogen atoms per molecule, a platinum catalyst and a further organopolysiloxane (III) .

DETAILED DESCRIPTION - The organopolysiloxane (I) has viscosity of 0.01-1000 Pa.s at 25 deg. C, and has aryl groups comprising 1-40 mol% of the total Si-bonded organic content. Polysilioxane (II) has viscosity of 0.001-10 Pa.s at 25 deg. C and is present in a quantity sufficient to cure (I). (III) has viscosity of 0.01- 10000 Pa.s at 25 deg. C, is present at 1.0 multiply 10-5 - 100 wt.%, based on (I), and when aryl groups are included, they comprise at most 1, or at least 40 mol% of the total Si-bonded organic groups.

INDEPENDENT CLAIMS are also included for:

(1) An electronic component comprising a semiconductor chip, a **ceramic**, **metal** or organic resin chip attachment element bonded by adhesive to the chip and a bonding wire, lead or bump which electrically connects the chip and the attachment element; the bonding wire or bump being at least partially embedded within a sealant; and

(2) Fabricating process for an electronic component.

USE - The composition is used as adhesive and/or sealant in an electronic component, e.g. an integrated **circuit**.

ADVANTAGE - The organopolysiloxane composition shows excellent degassing characteristics before curing, and cures to a silicone of complex modulus of at most 100 Mpa at neg. 65 deg. C and a shear frequency of 10 Hz, or a cured silicone of Young's modulus of at most 290 Mpa at neg. 65 deg. C.

Dwg.0/1

FS CPI EPI
FA AB
MC CPI: A06-A00E2; A08-C08; A08-C09; A12-E01; G03-B01; L04-C20A
EPI: U11-A07; U11-A09; U11-E02A3

L69 ANSWER 18 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:520663 HCAPLUS
DN 132:138273
TI Current trends in military microelectronic component packaging
AU Vettraino, Lawrence G.; Risbud, Subhash H.
CS Sacramento Engineering Laboratories Division, National Technical Systems, North Highlands, CA, 95660, USA
SO IEEE Transactions on Components and Packaging Technologies (1999), 22(2), 271-281
CODEN: ITCPFB; ISSN: 1521-3331
PB Institute of Electrical and Electronics Engineers
DT Journal; General Review
LA English
CC 38-0 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
AB A review with 39 refs. The U.S. Department of Defense (DoD) has historically relied on the use of hermetically-sealed **ceramic** and **metal** component packages for the reliability and integrity of military hardware. During the last twenty years, military electronics have become a very small segment of the total electronic market. Within this time frame, military research, development and stds. have fallen behind private industry innovation and practices. Due to the low vol., "high reliability" materials and processes, many in line process controls cannot be utilized as with the higher vol. com. parts. As a result, the cost of Mil-Spec components is typically twice to ten times those of com. parts. The DoD is currently seeking to use com. parts and practices, yet still maintain superior reliability in military electronic systems. This is being accomplished through two major thrust technologies; the first, the use of plastic-encapsulated microcircuits (PEM's) and the second, the use of environmentally protected chip-on-board (COB) processing. The traditional use of hermeticity and requirements of military electronic components are reviewed. Preliminary com. task force testing, which investigated the use of silicone gels and other org. materials, as a method to seal plastic packages, is addressed. A recent U.S. Air Force (reliability without hermeticity [RWOH]) study and follow on work, conducted by the joint military/industry plastic package availability (PPA) program, investigated the use of two ceramic layers (SiO2 and SiC) over silicon die, designed to increase the reliability of com. plastic

packages. These studies utilized highly accelerated stress testing (HAST) as an indicator of reliability. The use of **ceramic** and org. **coatings** to encapsulate COB hardware has also been undertaken. These studies have not only targeted single chip applications, but also multichip applications, such as, MCML packages. An overview of these investigations is presented, along with a discussion of and directions in DoD microelectronic packaging research.

ST review military microelectronic component packaging
IT Ceramics
Dies
(current trends in military microelectronic component packaging)
IT Epoxy resins, uses
Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(current trends in military microelectronic component packaging)
IT **Electronic** packages
Electronic packages
(integrated **circuits**; current trends in military microelectronic component packaging)
IT Microelectronics
(military; current trends in military microelectronic component packaging)
IT Integrated **circuits**
Integrated **circuits**
(packages; current trends in military microelectronic component packaging)
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Anon; General specification for integrated circuits (micro-circuits manufacturing) 1995, MIL-PRF-38535, P1
(2) Anon; Tech Order 00-25-259 1994, P00300-11-001800-21
(3) Anon; Tech Rep 5962-D763 1995, P1
(4) Anon; Tech Rep WL-TR-94-4086 1994, P1
(5) Anon; Test methods and procedures for microelectronics 1995, MIL-STD-883, P1
(6) Anon; Test methods for semiconductor devices 1995, MIL-STD-750, P1
(7) Anon; private communication from D Larson 1996
(8) Anon; private communication from G Plite 1996
(9) Balde, J; IEEE Trans Comp, Hybrids, Manufact Technol 1989, V12, P426
(10) Balde, J; IEEE Trans Comp, Hybrids, Manufact Technol 1991, V14, P352
(11) Benson, R; Proc Int Electron Packag Conf 1993, P893
(12) Cammilletti, R; Proc 1995 Electron Conf Multichip Modules 1996, P519
(13) Clegg, D; Proc Int Electron Packag Conf 1991, P590
(14) Donlin, N; Proc NEPCON West'96 Conf 1996, P317
(15) Fink, J; Proc NEPCON West'96 Conf 1996, P336
(16) Fink, J; Proc Surface Mount Int Conf 1995, P647
(17) Frear, D; Solder Mechanics: A State of the Art Assessment 1991, P47
(18) Gates, L; Electron Packag Prod 1994, V34(9), P48
(19) Gates, L; Proc Int Electron Packag Conf 1991, P109
(20) Gates, L; Proc NEPCON West'96 Conf 1996, P1084
(21) Kahn, M; The Electronic Materials Handbook--Vol 1 1989, P493
(22) Kaleta, T; Proc 1995 GaAs IC Symp
(23) Kovacs, R; Proc NEPCON West'96 Conf 1996, P328
(24) Lau, J; Ball Grid Array Technology 1995, P5
(25) Llevada, F; Proc Int Electron Packag Conf 1992, P97
(26) Llevada, F; Proc Int Electron Packag Conf 1993, P906
(27) Loboda, M; Proc 1996 Electron Comp Technol Conf 1996
(28) Loboda, M; Proc 1996 Electron Conf Multichip Modules 1996, P257 HCAPLUS

(29) Markstein, H; Electron Packag Prod 1995, V35(13), P24
(30) Mearig, J; SMT Mag 1994, V8(11), P42
(31) Plite, G; Proc Emerging Microelectron Interconnection Technol Conf 1996, P265
(32) Reilly, J; Proc Int Electron Packag Conf 1993, P590
(33) Reim, A; Proc Int Electron Packag Conf 1991, P118
(34) Rymaszewski, E; Microelectronics Packaging Handbook 1989, P50
(35) Sandeau, R; Proc Int Electron Packag Conf 1992, P23
(36) Spears, W; IEEE Trans Comp Hybrids, Manufact Technol 1989, V12, P506
(37) Traeger, R; Proc 25th Electron Comp Conf 1976, P461
(38) Virmani, N; Proc NEPCON West'96 Conf 1996, P347
(39) Wong, C; IEEE Trans Comp, Hybrids, Manufact Technol 1989, V12, P421
HCAPLUS

L69 ANSWER 19 OF 53 COMPENDEX COPYRIGHT 2003 EEI DUPLICATE 3
AN 2000(16):3523 COMPENDEX
TI Meso-scale **electro**-magnetically actuated normally closed valve realized on LTCC tapes.
AU Gongora-Rubio, Mario (Inst de Pesquisas Tecnologicas, Sao Paulo, Braz); Sola-Laguna, Luis; Smith, Michael; Santiago-Aviles, Jorge J.
MT Proceedings of the 1999 Microfluidic Devices and Systems II.
MO SPIE
ML Santa Clara, CA, USA
MD 20 Sep 1999-21 Sep 1999
SO Proceedings of SPIE - The International Society for Optical Engineering v 3877 1999.p 230-239
CODEN: PSISDG ISSN: 0277-786X
PY 1999
MN 56254
DT Journal
TC General Review
LA English
AB Sensors and actuators with promising characteristics in aggressive environments and high temperatures have been developed using low temperature co-fired ceramic tape technology.We would like to report our work on an **electro**-magnetically actuated normally closed valve.This is a hybrid device which utilizes a purely LTCC tape **electro**-magnet and fluid flow manifold, combined with an anisotropically etched silicon rectangular planar spring, and a high energy product SmCo mini-permanent magnet.Device dimensions are in the meso (intermediate) range with the smallest features (fluid conduit in the manifold) of 400 mu m and the largest (the actuating coil) of 15 mm.All parts of the **electromagnet** and the fluid flow channels were machined from DuPont 951 series, alumina based LTCC tapes utilizing either a numerically controlled milling machine, a puncher or an isotropic etching technique involving the glassy binder of a partially sintered LTCC tape.Two versions of this device have been fabricated.The first one, a **hybrid**, and an all **ceramic** (LTCC) valve.The **hybrid** device, currently under evaluation, consists of five layers of planar spiral coils, connected as to preserve the magnetic field direction.The total coil resistance is high (120 Ohms) and thermal considerations limits the current to 150 mA.Using a 900 Gauss SmCo magnet (1 mm diameter) we obtained 200 micrometers deflection of the rectangular planar spring with no hydraulic load.The best results so far are with the hybrid valve consisting of a silicon 30 micro-meter thick rectangular planar spring with a **polysiloxane** sealing element. (Author abstract) 11 Refs.
CC 632.2 Hydraulic Equipment and Machinery; 732.1 Control Equipment; 601.1

Mechanical Devices; 704.1 Electric Components; 714 Electronic Components and Tubes; 812.1 Ceramics
CT *Fluidic devices; Ceramic materials; Valves (mechanical); **Electromagnets**; Microelectronics; Microactuators; Microelectromechanical devices
ST Microvalves; **Electromagnetic** actuators; Microfluidic systems
ET Co*Sm; Co sy 2; sy 2; Sm sy 2; SmCo; Sm cp; cp; Co cp

L69 ANSWER 20 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:146709 HCAPLUS
DN 128:181698
TI Oxo-acid-modified epoxy silicone compositions for rapid cure release coating
IN Eckberg, Richard P.; Agars, Robert F.
PA General Electric Co., USA
SO U.S., 10 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C08L083-06
ICS C08G077-14; C08F002-50
NCL 522031000
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 37
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5721290	A	19980224	US 1996-757786	19961126
	JP 10212353	A2	19980811	JP 1997-317878	19971119
	EP 844267	A2	19980527	EP 1997-309414	19971121
	EP 844267	A3	19980812		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
PRAI US 1996-757786 19961126
AB Oxo acids HOOC((CH2)sO)t((CH2)uO)vR (R = monovalent radical selected from H, C1-40-alkyl, alkylene, alkynylene, arom., alkylarom. or carboxyl groups, and s, t, u and v = 0 or pos., such that at least s and t or u and v must be pos.) **esterified** with epoxy functional **silicones** at a molar level that is less than stoichiometric with respect to the epoxy functionality give compds. showing improved miscibility with certain photo-catalysts in the coating formulations. Epoxy silicone modified with 3,6-dioxoheptanoic acid was dissolved with iodonium catalyst, coated onto paper, and cured with UV light to give a release film showing tape adhesion force (aged 20 h at 70.degree.) 40 g/in. vs. 60 g/in. for the unmodified epoxy silicone.
ST siloxane coating release photocuring; catalyst crosslinking silicone photochem; iodonium salt catalyst photocuring; oxo acid modified epoxy silicone
IT Epoxy resins, uses
Epoxy resins, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(epoxy-contg. polysiloxane-, oxo acid-modified, with good miscibility to cure catalyst; oxo-acid-modified epoxy silicone compns. for rapid cure release coating)
IT Polysiloxanes, uses
Polysiloxanes, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES

(Uses)
(epoxy-contg., oxo acid-modified, with good miscibility to cure catalyst; oxo-acid-modified epoxy silicone compns. for rapid cure release coating)

IT Crosslinking catalysts
(photochem.; oxo-acid-modified epoxy silicone compns. for rapid cure release coating)

IT Release **coatings**
(photocurable; oxo-acid-modified epoxy silicone compns. for rapid cure release coating)

IT 82184-29-0, Bis(dodecylphenyl)iodonium hexafluoroantimonate 121239-75-6, ((4-Octyloxyphenyl)phenyl)iodonium hexafluoroantimonate
RL: CAT (Catalyst use); USES (Uses)
(oxo-acid-modified epoxy silicone compns. for rapid cure release coating)

IT 203133-30-6P 203133-31-7P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oxo-acid-modified epoxy silicone compns. for rapid cure release coating)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Anon; EP 0108208 1984 HCAPLUS
(2) Anon; EP 0625533 1994 HCAPLUS
(3) Anon; WO 9407965 1994 HCAPLUS
(4) Aoki; US 5364888 1994 HCAPLUS
(5) Crivello; US 4310469 1982 HCAPLUS
(6) Crivello; US 4617238 1986 HCAPLUS
(7) Crivello; US 4882201 1989 HCAPLUS
(8) Crivello; US 4981881 1991 HCAPLUS
(9) Eckberg; US 4256870 1981 HCAPLUS
(10) Eckberg; US 4279717 1981 HCAPLUS
(11) Eckberg; US 4977198 1990 HCAPLUS
(12) Eckberg; US 4987158 1991 HCAPLUS
(13) Eckberg; US 5178959 1993 HCAPLUS
(14) Eckberg; US 5227410 1993 HCAPLUS
(15) Eckberg; US 5240971 1993 HCAPLUS
(16) Eckberg; US 5258480 1993 HCAPLUS
(17) Eckberg; US 5360833 1994 HCAPLUS
(18) Eckberg; US 5369205 1994 HCAPLUS
(19) Eckberg; US 5650453 1997 HCAPLUS
(20) Kessel; US 5144051 1992 HCAPLUS
(21) Riding; US 5138012 1992 HCAPLUS
(22) Viventi; US 3816282 1974 HCAPLUS
(23) Wewers; US 5034491 1991 HCAPLUS

L69 ANSWER 21 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:728422 HCAPLUS
DN 130:39884
TI Adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same
IN Rojstaczer, Sergio R.; Tang, David Y.; Rosenfeld, Jerold C.
PA Occidental Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K003-10

ICS C08L079-08; C09J005-06; C09J179-08; C08L063-00; C09J163-00
CC 42-11 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10298536	A2	19981110	JP 1998-120224	19980430
	JP 3046952	B2	20000529		
	US 5935372	A	19990810	US 1997-848624	19970429
PRAI	US 1997-848624	A	19970429		

AB The title sealants comprise (A) a 30-50%-solids soln. from org. solvents and polyimide-**siloxane** from arom. dianhydrides and 5-80 mol% **siloxane**-free arom. diamines and H2NR2(SiR12O)mSiR12R2NH2 [R1, R2 = (un)substituted C1-12 aliph. group, C6-10 arom. group; m .gtoreq.5] and (B) 5-30 parts (based on 100 parts the component A) epoxy resin comprising alicyclic epoxy resins and hardeners. A polyimide-**siloxane** was prepd. from 4,4'-oxydiphthalic anhydride 184, bis(3-aminopropyl)tetramethyldisiloxane 25, bis(3-aminopropyl)polydimethylsiloxane (mol. wt. 841) 225, and m-bis(m-aminophenoxy)benzene 66 g and used with RSL 1462 and used in integrated **circuit** packaging.

ST adhesive sealant polyimide **polysiloxane** epoxy resin; integrated **circuit** packaging adhesive sealant

IT Adhesives
Electronic packaging process
Sealing compositions
(adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)

IT Epoxy resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)

IT **Polysiloxanes**, uses
Polysiloxanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-; adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)

IT **Polysiloxanes**, uses
Polysiloxanes, uses
Polysiloxanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-polyketone-; adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)

IT Polyketones
Polyketones
Polyketones
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-**siloxane**-; adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)

IT Polyimides, uses
Polyimides, uses
Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyketone-**siloxane**-; adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)
IT Polyimides, uses
Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polysiloxane**-; adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)
IT 170636-86-9P, 4,4'-Oxydiphthalic anhydride-bis(3-aminopropyl)tetramethyldisiloxane-bis(3-aminopropyl)polydimethylsiloxane-m-bis(m-aminophenoxy)benzene copolymer 190951-46-3P 216752-18-0P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)
IT 1320-67-8, Propylene glycol methyl ether 84540-57-8, Propylene glycol methyl ether acetate 88917-22-0, DiPropylene glycol methyl ether acetate
RL: NUU (Other use, unclassified); USES (Uses)
(adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)
IT 25085-98-7, ERL 4221 25085-99-8, RSL 1462
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(adhesive sealants for bonding **metal** parts to **ceramics** and method and products using the same)

L69 ANSWER 22 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:62603 HCAPLUS
DN 128:149012
TI Solid support for analytical measuring processes, and method for its production, and its use
IN Eipel, Heinz; Keller, Harald
PA BASF A.-G., Germany
SO Ger. Offen., 8 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM G01N033-551
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 4, 9, 19, 59, 80
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19628928	A1	19980122	DE 1996-19628928	19960718
	CA 2260807	AA	19980129	CA 1997-2260807	19970707
	WO 9803257	A1	19980129	WO 1997-EP3571	19970707
	W: AL, AU, BG, BR, CA, CN, CZ, GE, HU, IL, JP, KR, LT, LV, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9735419	A1	19980210	AU 1997-35419	19970707
	AU 737158	B2	20010809		
	BR 9710473	A	19990817	BR 1997-10473	19970707
	EP 948398	A1	19991013	EP 1997-931787	19970707
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, FI				
	JP 2000516705	T2	20001212	JP 1998-506488	19970707
	IL 127688	A1	20010826	IL 1997-127688	19970707

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     NO 9900186         A     19990115        NO 1999-186       19990115
PRAI DE 1996-19628928   A     19960718
     WO 1997-EP3571     W     19970707
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AB A solid support for anal. measurements consists of an inert solid carrier on which hydrophilic measurement areas are prepd. by sepn. from hydrophobic areas, such that .gtoreq.10 measurement areas/cm2 are produced on the support. The solid support, which can be chosen from glass, **ceramics**, quartz, **metals**, stone, polymers, rubbers, silicon, or porcelain, can be **coated** by **selective** incorporation of hydrophobic or hydrophilic areas (e.g., selective **silanization**, photoetching, etc.). A cleaned glass surface was selectively hydrophobized by reaction with hexadecyltrimethylsilane (to 25 measuring areas per cm2), and then used for fluorescent anal. of trypsin (protease) inhibitor using fluoresceinisothiocyanate-marked casein. The method can also be used in combinatorial chem., agriculture, toxicol., environmental anal., etc.

ST coating hydrophilic hydrophobic analytical support; hydrophobization coating analytical support; proteinase inhibitor coated analytical support

IT Caseins, analysis
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(fluoresceinisothiocyanate derivs.; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Bioassay
(fluorimetric; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Coating materials
(hydrophilic coatings; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Coating materials
(hydrophobic; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Silylation
(solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Glass, analysis
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(support, hydrophobized; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Ceramics
Porcelain
(support; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Metals, analysis
Polymers, analysis
Stone (construction material)
Synthetic rubber, analysis
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(support; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT Hydrophilicity
Hydrophobicity
(surface; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT 9035-81-8, Trypsin inhibitor 37205-61-1, Proteinase inhibitor
RL: ANT (Analyte); ANST (Analytical study)
(detn. of; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT 16415-12-6, Hexadecyltrimethoxysilane
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent)
(hydrophobization reagent; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT 2321-07-5D, Fluorescein, isothiocyanate derivs., reaction products with caseins
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

IT 7440-21-3P, Silicon, analysis 14808-60-7P, Quartz, analysis
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(support; solid inert support coated with sepd. hydrophobic and hydrophilic areas for anal. measuring processes)

L69 ANSWER 23 OF 53 JAPIO COPYRIGHT 2003 JPO
AN 1998-017383 JAPIO
TI ELECTRONIC COATING COMPOSITION
IN CURRIE ALEXANDER BRIAN; HAINES CATHRYN MARIE; LITTLE MICHAEL DEAN; MICHAEL KEITH WINTON; SCHEIBERT KRISTEN ANDREA
PA DOW CORNING CORP
PI JP 10017383 A 19980120 Heisei
AI JP 1997-27080 (JP09027080 Heisei) 19970210
PRAI US 1996-605576 19960222

X see next

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998
IC ICM **C04B041-87**
ICS C07F007-08; **H01L021-316**
ICA C09D183-04
AB PROBLEM TO BE SOLVED: To obtain a coating compsn. as a stable soln. capable of deposing a coating film having superior quality and an unexpected thickness on an electronic device by incorporating specified linear **siloxane** as a carrier fluid for a precursor of Si-contg. ceramic.
SOLUTION: This coating compsn. contains 1-50wt.% precursor of Si-contg. ceramic and 50-99wt.% linear **siloxane** represented by the formula, R<SB>3</SB>-(SiR<SB>2</SB>-O)-R<SB>3</SB> [where each of R<SB>1</SB>-R<SB>3</SB> is H, 1-6C alkyl, alkenyl or aryl and (n) is 1-6]. A coating film obtd. from this coating compsn. has high quality (e.g. purity and dielectric constant) and the desired thickness. Since this coating compsn. has a long shelf life even at room temp. and contains a small amt. of a volatile org. component, it has satisfactory fitness for a storage vessel and does not adversely affect the environment.
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L69 ANSWER 24 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1997-417990 [39] WPIX
DNN N1997-348117 DNC C1997-134011
TI Coating for electronic devices - uses linear **siloxane** as a non volatile solvent for pre-ceramic silicon containing material.
DC A26 A85 G02 L03 U11
IN CURRIE, A B; HAINES, C M; LITTLE, M D; MICHAEL, K W; SCHEIBERT, K A

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PA    (DOWO) DOW CORNING CORP
CYC   10
PI    EP 791567     A1 19970827 (199739)* EN    8p    C04B041-50       <--
         R: DE FR GB IT NL SE
      US 5707683    A  19980113 (199809)        6p    B05D005-12
      JP 10017383   A  19980120 (199813)        6p    C04B041-87       <--
      KR 97062005   A  19970912 (199839)              C09D183-04
      TW 438870     A  20010607 (200175)              C09D183-04
ADT   EP 791567 A1 EP 1997-300830 19970210; US 5707683 A US 1996-605576
      19960222; JP 10017383 A JP 1997-27080 19970210; KR 97062005 A KR 1997-5068
      19970220; TW 438870 A TW 1997-101834 19970217
PRAI  US 1996-605576    19960222
REP   EP 517475; EP 560617; EP 579456; EP 606588
IC    ICM  B05D005-12; C04B041-50; C04B041-87
      ICS  C07F007-08; H01L021-312; H01L021-316;
           H01L023-29
ICA   C09D183-04
AB    EP    791567 A UPAB: 19970926
      Coating composition (C) comprises 1-50 wt.% of preceramic
      silicon-containing material (M) and 50-99 wt.% of linear siloxane
      (S) of structure R3-[SiR2-O]n-SiR3; where R = H, 1-6 C alkyl, an alkenyl
      or an aryl; n = 1-6.
           Also claimed is method of coating electronic substrate comprising
      applying the coating composition (C) to the substrate and then heating in
      an inert atmosphere to a temperature above the melting point of the
      preceramic silicon-containing material to cause the coating to flow.
           Preferably coating (C) also may contain modifying ceramic oxide
      precursors comprising a compound containing an element selected from Ti,
      Zr, Al, Ta, Va, Nb, B and P where the compound contains at least one
      hydrolysable substituent selected from alkoxy or acyloxy and the compound
      is present in an amount such that the silica coating formed from the
      coating composition contains 0.1-30 wt.% modifying ceramic oxide.
           USE - Coating electronic devices (e.g. as protective coatings),
      inter-level dielectric layers, doped dielectric layers to produce
      transistor like devices, pigment loaded binder systems containing silicon
      to produce capacitor  devices etc.
           ADVANTAGE - Solutions of preceramic in siloxane fluids have
      a long shelf life even at room temperature, low volatile organic compound
      content and good compatibility with storage containers.
      Dwg.0/0
FS    CPI EPI
FA    AB
MC    CPI: A06-A00E2; A12-E01; G02-A05B; L03-D05A; L04-C20B
      EPI: U11-C05A

L69   ANSWER 25 OF 53  WPIX   (C) 2003 THOMSON DERWENT
AN    1996-140613 [15]    WPIX
DNN   N1996-117762        DNC C1996-044247
TI    Ceramic composites prodn. with improved interlayer adhesion - by combining
      two or more ceramic layers using removable silanised plastic
      base film with rough surface, and co-firing green ceramic.
DC    L03 P64 V04 V06 X12 X16 X22
IN    HOLZSCHUH, R; LINDEMANN, G; SCHNEIDER, G; STARK, E
PA    (BOSC) BOSCH GMBH ROBERT
CYC   18
PI    DE 4446533    C1 19960314 (199615)*        5p    C04B041-85       <--
      WO 9620145    A1 19960704 (199632) DE     21p    C04B035-622
         RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
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W: JP KR
EP 750597 A1 19970102 (199706) DE C04B035-622
R: DE ES FR GB IT
JP 09509644 W 19970930 (199749) 15p C04B035-622
KR 97701160 A 19970317 (199813) C04B035-622
EP 750597 B1 19990818 (199937) DE C04B035-622
R: DE ES FR GB IT
DE 59506643 G 19990923 (199945) C04B035-622
ES 2136313 T3 19991116 (200001) C04B035-622

ADT DE 4446533 C1 DE 1994-4446533 19941224; WO 9620145 A1 WO 1995-DE1662 19951125; EP 750597 A1 EP 1995-936979 19951125, WO 1995-DE1662 19951125; JP 09509644 W WO 1995-DE1662 19951125, JP 1996-520110 19951125; KR 97701160 A WO 1995-DE1662 19951125, KR 1996-704386 19960813; EP 750597 B1 EP 1995-936979 19951125, WO 1995-DE1662 19951125; DE 59506643 G DE 1995-506643 19951125, EP 1995-936979 19951125, WO 1995-DE1662 19951125; ES 2136313 T3 EP 1995-936979 19951125

FDT EP 750597 A1 Based on WO 9620145; JP 09509644 W Based on WO 9620145; KR 97701160 A Based on WO 9620145; EP 750597 B1 Based on WO 9620145; DE 59506643 G Based on EP 750597, Based on WO 9620145; ES 2136313 T3 Based on EP 750597

PRAI DE 1994-4446533 19941224

REP EP 383391; EP 406911; EP 615964; WO 9213435

IC ICM C04B035-622; **C04B041-85**
ICS B28B001-16; B28B001-30; B32B018-00; **C04B041-89**; H01B003-12; **H01L021-48**; **H01L023-12**; **H01L023-15**; H01M002-16

AB DE 4446533 C UPAB: 19960417
The prodn. of ceramic composites (I) with at least two layers, with better interlayer adhesion and better homogeneity within the layers comprises: (a) producing a ceramic substrate film (A) with optimum roughness by coating a ceramic slip (II) contg. finely divided ceramic raw material, organic film former and solvent onto a **silanised** plastic base film (B) with a surface roughness corresp. to the required roughness of (A), then evaporating the solvent and sepg. (A) from (B); (b) applying a slip with a compsn. different from that of (II) (at least w.r.t. the ceramic component), at least on the side of film (A) (or a punched-out substrate card) which was in contact with film (B), and evaporating the solvent; and (c) heating the green ceramic to remove organic components, and sintering the various layers together to form the composite.

USE - Used as electrical and electronic components, sensor or actuator elements, and components in fuel cells (claimed). Applications include, e.g. ceramic condensers, varistors, NTC and PTC resistors, actuators, resonators, switching circuits on alumina substrates, elements for gas sensors, etc..

ADVANTAGE - The prodn. of robust multilayer ceramic components is facilitated with good interlayer adhesion and very homogeneous layers after co-firing, even if the layers are very thin. The ceramic film is easily removed from the base film (B) without warping and without removing any components from (B). In contrast to prior-art **silanised** polyester base films, (B) has a low electrostatic potential, so that the underside of film (A) is free from dust and fibres etc.. The surface structure (roughness) of (B) and the low adhesion between (A) and (B) due to the **silanised** layer are almost unchanged even after many cycles.
Dwg.0/0

FS CPI EPI GMPI
FA AB
MC CPI: L03-E01; L03-H

EPI: V04-R07A1; V04-R07P; V06-K08; X12-E01A; X16-F02; X22-A05B

L69 ANSWER 26 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1995-392156 [50] WPIX
DNN N1995-285893 DNC C1995-168944
TI Binary azeotropic compsns. contg. octa methyl-tri **siloxane** - with certain alcohol cpds. or an ester are useful as environmentally friendly cleaning agents.
DC E11 E17 G04 L03 M12 P43 V04
IN FLANINGAM, O L; WILLIAMS, D E
PA (DOWO) DOW CORNING CORP
CYC 9

PI						
US 5454970	A	19951003	(199550)*		7p	C11D007-26
EP 696637	A2	19960214	(199611)	EN	8p	C11D007-50
R: DE FR GB IT						
JP 08060195	A	19960305	(199619)		8p	C11D007-26
CA 2150406	A	19960212	(199623)			C11D007-50
EP 696637	A3	19960626	(199635)			C11D007-26
TW 275646	A	19960511	(199635)			C11D007-26
EP 696637	B1	19980211	(199811)	EN	9p	C11D007-50
R: DE FR GB IT						
DE 69501605	E	19980319	(199817)			C11D007-50
MX 188996	B	19980525	(200029)			C11D007-026

ADT US 5454970 A US 1994-289360 19940811; EP 696637 A2 EP 1995-303961 19950608; JP 08060195 A JP 1995-147537 19950614; CA 2150406 A CA 1995-2150406 19950529; EP 696637 A3 EP 1995-303961 19950608; TW 275646 A TW 1994-108090 19940902; EP 696637 B1 EP 1995-303961 19950608; DE 69501605 E DE 1995-601605 19950608, EP 1995-303961 19950608; MX 188996 B MX 1995-2521 19950607
FDT DE 69501605 E Based on EP 696637
PRAI US 1994-289360 19940811
REP No-SR.Pub; 3.Jnl.Ref; JP 06093294; JP 06306392; JP 06313196
IC ICM C11D007-026; C11D007-26; C11D007-50
ICS B08B003-008; B08B003-08; B23K035-363; C07C031-02; C07C069-68; C07F007-08; C11D007-050; C23G005-02; C23G005-032; **H01L021-304** ; H05K003-026
ICA H05K003-26
AB US 5454970 A UPAB: 19951215
A compsn. consists of (a) (i) 60-92 wt.% octamethyltrisiloxane (I); and (ii) 8-40 wt.% 2-methyl-1-pentanol (II), where the compsn. is homogeneous and azeotropic at 0-148deg.C and where the compsn. has a vapour pressure of 1000 Torr at 148deg.C when the compsn. consists of 60 wt.% (I) and 40 wt.% (II), and of 0.7 Torr at 0deg.C when the compsn. consists of 92 wt.% (I) and 8 wt.% (II); or (b) (i) 72-95 wt.% (I); and (ii) 5-28 wt.% 1-hexanol (III), where the compsn. is homogeneous and azeotropic at 50-153deg.C and where the compsn. has a vapour pressure of 1000 Torr at 153deg.C when the compsn. consists of 72 wt.% (I) and 28 wt.% (III), and of 16.8 Torr at 50deg.C when the compsn. consists of 95 wt.% (I) and 5 wt.% (III); or (c) (i) 87-98 wt.% (I); and (ii) 2-13 wt.% 1-butoxy-2-propanol (IV), where the compsn. is homogeneous and azeotropic at 100-162deg.C and where the compsn. has a vapour pressure of 1000 Torr at 162deg.C when the compsn. consists of 87 wt.% (I) and 13 wt.% (IV), and of 148.8 Torr at 100deg.C when the compsn. consists of 98 wt.% (I) and 2 wt.% (IV); or (d) (i) 54-64 wt.% (I); and (ii) 36-46 wt.% ethyl lactate (V), where the compsn. is homogeneous and azeotropic at 0-149deg.C and where the compsn. has a vapour pressure of 1000 Torr at 149deg.C when the compsn. consists of 61 wt.% (I) and 39 wt.% (V), and of 1.1 Torr at 0deg.C when the compsn. consists of 54 wt.% (I) and 46 wt.% (V).

USE - The compsns. are used as cleaning agents for application to articles for cleaning material from their surfaces, partic. for an **electronic circuit** board or **metal**, **ceramic**, glass or plastic articles (all claimed). The materials cleaned from the surfaces are carbonaceous materials and solder fluxes (claimed). Specific articles for cleaning with the compsns. include electronic and semiconductor parts, electric and precision machinery parts such as ball bearings, optical parts and components such as lenses, photographic and camera parts and equipment, and military and space hardware such as precision guidance equipment used in the defence and aerospace industries. The compsns. are partic. useful in defluxing and precision cleaning, low pressure vapour degreasing and vapour phase cleaning.

ADVANTAGE - The cleaning agents are environmentally friendly. They have enhanced solvency power (cf. (I) alone) and maintain solvency power on evaporation. They can easily be sepd. from the contaminated cleaning bath effluent, distilled and recirculated as fresh cleaning agent. They do not harm delicate surfaces. As the azeotropes have higher **siloxane** content and lower alcohol content than similar azeotropes contg. lower mol.wt. alcohols, they are less likely to generate tropospheric ozone and smog. Volatile methyl **siloxanes** do not attack the stratospheric ozone layer and have min. global warming potential. Cpd. (I) is a clear, odourless, non-toxic, non-greasy, non-stinging fluid which is non-irritating to the skin. It leaves no residue after 30 min. at room temp. when 1 g is placed on filter paper.
Dwg.0/0

FS CPI EPI GMPI
FA AB; DCN
MC CPI: E05-E02B; E10-E04K; E10-E04L; E10-E04M4; G04-B08; L03-H04E9; L03-J; M12-A01; M12-B01
EPI: V04-R03C; V04-R03C9

L69 ANSWER 27 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1995-174011 [23] WPIX
DNN N1995-136524 DNC C1995-080767
TI Smoothing ceramic substrate to produce high thermal conductivity - by coating with inorganic polymer contg. **siloxane** units.
DC A26 L02 L03 U11 U14 V04
PA (FUIT) FUJITSU LTD
CYC 1
PI JP 07094863 A 19950407 (199523)* 5p H05K003-38
ADT JP 07094863 A JP 1993-255290 19930920
PRAI JP 1993-255290 19930920
IC ICM H05K003-38
ICS **C04B041-85**; **H01L021-84**; H05K001-03
AB JP 07094863 A UPAB: 19950619
Ceramic substrate is smoothed by coating with inorganic polymer of formula (I), or organic polymer of formula (II), where R is 1-3C alkyl or phenyl.

ADVANTAGE - Strong smooth surface of high thermal conductivity is simply formed.
Dwg.0/20

FS CPI EPI
FA AB; GI
MC CPI: A06-A00E1; A06-B; A11-B05; A12-B08; A12-W12G; L02-A07; L03-H04E5
EPI: U11-D01A; U14-H03C; V04-R07P

L69 ANSWER 28 OF 53 WPIX (C) 2003 THOMSON DERWENT DUPLICATE 4
AN 1994-345034 [43] WPIX

DNN N1994-270824 DNC C1994-157013
TI Forming silicate glass thin film in mfg. semiconductor device + - includes forming **polysiloxane** silicone resin thin film on undercoat layer, irradiating selected region with positive ions and heating.
DC A85 L03 U11
PA (OKID) OKI ELECTRIC IND CO LTD
CYC 1
PI JP 06267937 A 19940922 (199443)* 5p H01L021-316 <--
JP 3217528 B2 20011009 (200164) 5p H01L021-316 <--
ADT JP 06267937 A JP 1993-52735 19930312; JP 3217528 B2 JP 1993-52735 19930312
FDT JP 3217528 B2 Previous Publ. JP 06267937
PRAI JP 1993-52735 19930312
IC ICM **H01L021-316**
ICS C03B008-02; **C04B041-87**
AB JP 06267937 A UPAB: 19941216
Process includes forming a **polysiloxane** silicone resin thin film on an undercoat layer, irradiating positive ions to a selected region on the resin film and heating it.
ADVANTAGE - A patterned silicate glass thin film may be formed easily.
Dwg.0/0
FS CPI EPI
FA AB; GI
MC CPI: A06-A00E2; A10-E05; A10-E10; A11-B05; A12-E07C; L04-C02D; L04-C12D; L04-C16
EPI: U11-C05C7

L69 ANSWER 29 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1995:638288 HCAPLUS
DN 123:23664
TI Ceramic **circuit** boards
IN Kato, Kazuo; Sawa, Hiroaki; Asai, Shinichiro
PA Denki Kagaku Kogyo Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05K001-03
ICS H05K001-05; H05K003-38; H05K007-20
CC 76-2 (Electric Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06334286	A2	19941202	JP 1993-124334	19930526
PRAI	JP 1993-124334		19930526		

AB Metal foil **circuits** (e.g., Cu) are attached, with highly-thermally-conductive org. adhesives, to the both sides of AlN plates, which are soldered to metal substrates (e.g., Al). The **circuit** boards have excellent thermal cond.
ST ceramic **circuit** board aluminum nitride copper; thermal conductor copper ceramic **circuit** board; adhesive org ceramic **circuit** board
IT **Siloxanes** and Silicones, uses
RL: NUU (Other use, unclassified); USES (Uses)
(adhesives for attaching metal foil **circuits** to thermally-conductive ceramic **circuit** boards)
IT Adhesives
(metal foil **circuits** adhered to thermally-conductive ceramic

circuit boards)
IT Epoxy resins, uses
RL: NUU (Other use, unclassified); USES (Uses)
(metal foil **circuits** adhered to thermally-conductive ceramic
circuit boards)
IT **Electric circuits**
(printed, boards, thermally-conductive; metal foil **circuits**
adhered to)
IT 1344-28-1, Alumina, uses
RL: NUU (Other use, unclassified); USES (Uses)
(adhesives for attaching metal foil **circuits** to
thermally-conductive ceramic **circuit** boards)
IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses 24304-00-5, Aluminum
nitride
RL: DEV (Device component use); USES (Uses)
(**metal** foil **circuits** adhered to **ceramic**
circuit boards)

L69 ANSWER 30 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1995:356727 HCAPLUS
DN 122:121095
TI **Electric circuit** boards suitable for power modules
IN Kato, Kazuo; Sawa, Hiroaki; Myai, Akira; Asai, Shinichiro
PA Denki Kagaku Kogyo Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05K001-05
ICS H05K003-38
CC 76-14 (Electric Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06181370	A2	19940628	JP 1992-331705	19921211
PRAI	JP 1992-331705		19921211		

AB The adhesive for lamination in the boards with patterned **metallic**
circuits on **ceramic** sheets on **metallic**
substrates is a thermally conductive org. material contg. powd. metals or
oxides. The adhesive reduces thermal stress.
ST conductive org adhesive **circuit** board; metal powder org polymer
adhesive **circuit**; oxide powder org polymer adhesive
circuit
IT Epoxy resins, uses
Siloxanes and Silicones, uses
RL: DEV (Device component use); USES (Uses)
(adhesives; for metallic base **circuit** board lamination in
prevention of thermal stress)
IT Thermal conductors
(in org. polymer adhesives for **circuit** boards)
IT Stress, mechanical
(thermal; thermally conductive adhesives for metallic base
circuit board lamination in prevention of)
IT Adhesives
(heat-conductive, for metal based **circuit** board lamination in
prevention of thermal stress)
IT **Electric circuits**
(printed, thermally conductive adhesives for)

IT 1344-28-1, Alumina, uses 7440-22-4, Silver, uses 7631-86-9, Silica, uses 24304-00-5, Aluminum nitride (AlN)
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(powd.; in thermally conductive org. polymer adhesives for **circuit** boards)

L69 ANSWER 31 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1994:424842 HCAPLUS
DN 121:24842
TI Hermetic protection for integrated **circuits**, based on a ceramic layer
IN Chandra, Grish; Michael, Keith Winton
PA Dow Corning Corp., USA
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM H01L021-316
ICS H01L021-56; C04B041-50; H01L023-29; H01L023-31; H01L023-485; C04B041-45
CC 76-3 (Electric Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 590781	A1	19940406	EP 1993-306588	19930819
	EP 590781	B1	19970521		
	R: DE, FR, GB, IT, NL, SE				
PRAI	US 1992-937086		19920831		

Check out ✓

OS MARPAT 121:24842
AB This invention relates to integrated **circuits** which are protected from the environment. Such **circuits** are hermetically sealed by applying **ceramic** layers to the top **metalization.**
ST hermetic protection integrated **circuit** ceramic
IT Potting compositions
(ceramic layers, for integrated **circuits**)
IT Silsesquioxanes
RL: USES (Uses)
(hermetic protection by, of integrated **circuits**)
IT **Siloxanes** and Silicones, uses
RL: USES (Uses)
(integrated **circuits** encapsulated in, hermetically protected by ceramic layers)
IT Solders
(noncorroding layers of, on bond pads of integrated **circuits** hermetically protected by ceramic layers)
IT Potting
(of integrated **circuits**, by ceramic layers)
IT Epoxy resins, uses
RL: USES (Uses)
(silver-filled, noncorroding layers of, on bond pads of integrated **circuits** hermetically protected by ceramic layers)
IT **Electric circuits**
(integrated, hermetic protection of, by ceramic layers)
IT 7440-32-6, Titanium, uses 12642-02-3, Titanium, tungsten 25583-20-4, Titanium nitride
RL: USES (Uses)

(barrier layers from, in integrated **circuits** hermetically
protected by ceramic layers)
IT 409-21-2, Silicon carbide, uses 7631-86-9, Silica, uses 11105-01-4,
Silicon nitride oxide 12033-89-5, Silicon nitride, uses 39345-87-4,
Silicon carbide oxide 64477-28-7, Silicon carbide nitride 102819-99-8,
Silicon carbide nitride oxide
RL: USES (Uses)
(hermetic protection by, of integrated **circuits**)
IT 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses 7440-50-8, Copper,
uses 7440-57-5, Gold, uses
RL: USES (Uses)
(noncorroding layers of, on bond pads of integrated **circuits**
hermetically protected by ceramic layers)

L69 ANSWER 32 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1994-256736 [32] WPIX
DNN N1994-214304 DNC C1994-124474
TI Formation of ceramic silicon oxide thick films on substrate surfaces - to
produce films that are free of cracks and pinholes and are insoluble in
organic solvents.
DC A26 A85 L03 U11
IN MINE, K; NAKAMURA, T; SASAKI, M
PA (DOWO) DOW CORNING TORAY SILICONE; (DOWO) DOW CORNING CORP; (DOWO) DOW
CORNING TORAY SILICONE KK
CYC 9
PI EP 610899 A2 19940817 (199432)* EN 11p C23C018-02
R: DE FR GB IT NL
JP 06235067 A 19940823 (199438) 7p C23C014-58
JP 06236872 A 19940823 (199438) 6p H01L021-316 <--
JP 06240455 A 19940830 (199439) 6p C23C014-58
US 5380555 A 19950110 (199508) 9p B05D003-02
EP 610899 A3 19960515 (199628) C23C018-02
TW 295689 A 19970111 (199717) H01L021-31 <--
EP 610899 B1 20000419 (200024) EN C23C018-02
R: DE FR GB IT NL
DE 69423991 E 20000525 (200032) C23C018-02
JP 3188782 B2 20010716 (200142) 6p H01L021-316 <--
JP 3229418 B2 20011119 (200176) 5p H01L021-316 <--
JP 3229419 B2 20011119 (200176) 6p H01L021-316 <--
KR 295485 B 20011024 (200236) C04B041-81 <--
ADT EP 610899 A2 EP 1994-101924 19940208; JP 06235067 A JP 1993-44590
19930209; JP 06236872 A JP 1993-45823 19930210; JP 06240455 A JP
1993-45824 19930210; US 5380555 A US 1994-187239 19940126; EP 610899 A3 EP
1994-101924 19940208; TW 295689 A TW 1994-100722 19940131; EP 610899 B1 EP
1994-101924 19940208; DE 69423991 E DE 1994-623991 19940208, EP
1994-101924 19940208; JP 3188782 B2 JP 1993-44590 19930209; JP 3229418 B2
JP 1993-45823 19930210; JP 3229419 B2 JP 1993-45824 19930210; KR 295485 B
KR 1994-2644 19940208
FDT DE 69423991 E Based on EP 610899; JP 3188782 B2 Previous Publ. JP
06235067; JP 3229418 B2 Previous Publ. JP 06236872; JP 3229419 B2 Previous
Publ. JP 06240455; KR 295485 B Previous Publ. KR 94019653
PRAI JP 1993-44590 19930209; JP 1993-45823 19930210; JP 1993-45824
19930210
REP No-SR.Pub; 2.Jnl.Ref; EP 270369; EP 419076; EP 479452; EP 579456; JP
60124943; JP 61220435
IC ICM B05D003-02; **C04B041-81**; C23C014-58; C23C018-02;
H01L021-31; **H01L021-316**
ICS C01B033-12; C03C017-23; **C04B041-50**; **C04B041-87**;

C08G077-02; C09D183-05; C23C018-12; **H01L021-312**
AB EP 610899 A UPAB: 19941013
Formation of a silicon oxide film on a substrate comprises: (a) forming a coating on the surface of a substrate, where the base component of the coating is a Si resin with the general formula (HR2SiO1/2)x(SiO4/2)1.0, where R is selected from an H atom, alkyl groups, and aryl groups and where x = 1.0-2.0 and (b) converting the coating into a ceramic silicon oxide film by heating the coated substrate.
The silicon resin has a wt.-average molecular wt. that does not exceed 100,000 and a softening pt. which does not exceed 400 deg.C. The substrate is selected from glass, ceramic, metal and semiconductor devices. The coating may also contain materials selected from Pt cpds., acid catalysts, alcohols, and low molecular wt. silanol-terminated **siloxanes**.
The coating is converted into a ceramic silicon film by heating to at least 300 deg.C for at least 30 mins. in an atmos. that contains less than 20 vol.% of oxygen gas.
USE/ADVANTAGE - Formation of thick silicon oxide films on a substrate for use as semiconductor devices. The films are essentially free of cracks and pinholes and are insoluble in organic solvents.
Dwg.0/0
FS CPI EPI
FA AB
MC CPI: A06-A00D; A10-E05B; A11-B05; A12-E07C; A12-W12G; L04-C12A
EPI: U11-A01A; U11-C05B7; U11-C05D1

L69 ANSWER 33 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1993-181771 [22] WPIX
DNN N1993-139795 DNC C1993-080493
TI Electronic device encapsulated by silicone resin - contg. di phenyl-**siloxane** and methyl-phenyl-**siloxane** units.
DC A26 A85 L03 P73 U11
IN WONG, C
PA (AMTT) AT & T BELL LAB
CYC 1
PI US 5213864 A 19930525 (199322)* 14p B32B003-26
ADT US 5213864 A US 1991-802579 19911205
PRAI US 1991-802579 19911205
IC ICM B32B003-26
ICS **H01L023-28**
AB US 5213864 A UPAB: 19931116
An electronic device is encapsulated by a silicone resin. The resin is a poly (dimethyl)(diphenyl)(methyl phenyl) **siloxane** i.e. is of formula (I) where R1 and R2 are methyl, R3 and R4 are phenyl, and one of R5 and R6 is methyl with the other phenyl. The mole ratio of the sum of the methyl phenyl and diphenyl **siloxane** units to the dimethyl **siloxane** units is 10-40%.
USE/ADVANTAGE - The silicone resin (17) encapsulated e.g. a wire bonded hybrid integrated **circuit** comprises a silicon chip (11) mounted on a **ceramic** substrate (12) having a **metal** layer (13) on it defining a **circuit** pattern and bonding pads (14) connected to the silicon chip (11) by metal wires (15). The silicone encapsulant protects the **circuit** at varying temps. and humidity and at high bias voltages, and has improved performance (resistance to crystallisation) at low temps such as -40 deg. C or below.
Dwg.1/2
FS CPI EPI GMPI
FA AB; GI

MC CPI: A06-A00B; A06-A00E2; A12-E04; L04-C20A
EPI: U11-A07

L69 ANSWER 34 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1994:415720 HCAPLUS
DN 121:15720
TI Tribochemical mechanism of silicon nitride with water and ethanol lubricants
AU Wei Jianjun; Xue Qunji
CS Lanzhou Inst. Chem., Chin. Acad. Sci., Lanzhou, 730000, Peop. Rep. China
SO Guisuanyan Xuebao (1993), 21, 149-54
CODEN: KSYHA5; ISSN: 0454-5648
DT Journal
LA Chinese
CC 57-2 (**Ceramics**)
Section cross-reference(s): 51
AB The friction and wear properties of silicon nitride (Si3N4) under dry sliding, water and ethanol lubricating conditions were investigated using a reciprocating pin-on-block tester. The tribochem. mechanism of Si3N4 with water and ethanol lubricants was studied by means of SEM, XRD, XPS. From the results, the decreasing order of the friction coeffs. and the worn vol. of Si3N4 in various lubricating conditions are summarized as follows: dry sliding; water lubrication; ethanol lubrication. The proposed tribochem. mechanism of Si3N4 in water involves two aspects: Si3N4 reacts with water and forms crystal SiO2; also Si3N4 reacts with oxygen dissolved in water, forming the amorphous Si-O compds. The proposed tribochem. mechanism of Si3N4 in ethanol includes that Si3N4 reacts with ethanol and produces crystal SiO2, which **esterifies** to form sol. **silicon** esters.
ST silicon nitride ceramic tribochem water ethanol
IT Friction
(of silicon nitride ceramics, tribochem. mechanism with water and ethanol lubricants in relation to)
IT Ceramic materials and wares
(silicon nitride, tribochem. mechanism of, with water and ethanol lubricants)
IT 12033-89-5, Silicon nitride, uses
RL: USES (Uses)
(ceramics, tribochem. mechanism of, with water and ethanol lubricants)
IT 64-17-5, Ethanol, uses 7732-18-5, Water, uses
RL: USES (Uses)
(lubricants, silicon nitride ceramic tribochem. mechanism with)

L69 ANSWER 35 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1992-254426 [31] WPIX
DNN N1992-194094 DNC C1992-113292
TI Prepn. of multilayered **circuit** board - by coating aprotic solvent soln. of poly amidic acid and heating to remove solvent and effect dehydration ring closure.
DC A26 A85 L03 U14 V04 X12
PA (HITB) HITACHI CHEM CO LTD
CYC 1
PI JP 04171607 A 19920618 (199231)* 8p H01B003-30
ADT JP 04171607 A JP 1990-298083 19901102
PRAI JP 1990-298083 19901102
IC ICM H01B003-30
ICS C08G073-10; C09D179-08; **H01L023-12; H01L023-14;**
H05K003-46

AB JP 04171607 A UPAB: 19931006
The board is prepd. by coating a polyamidic acid having a repeat unit of formula (I) where Ar is a divalent organic gp. on semiconductor, **hybrid** integrated **circuit** board, **ceramic circuit** board, etc. and hardening to provide an insulating film of polyimide having a repeat unit of formula (II).
The polyamidic acid is prepd. by reacting p-terphenyl- 3,3'',4,4'' -tetracarboxylic acid dianhydride and opt. up to 70 mol.% other carboxylic acid dianhydride (e.g., pyromellitic dianhydride, 3,3',4,4'-benzophenone tetracarboxylic dianhydride, 3,3',4,4'-biphenyl tetracarboxylic dianhydride, 1,2,5,6-, 2,3,6,7- or 1,4,5,8-naphthalene tetracarboxylic dianhydride, etc. to improve the heat resistance and mechanical properties) or a **siloxane**-contg. diamine (e.g., 1,3-bis (3,4-dicarboxyphenyl- 1,1,3,3-tetramethyl disiloxanyl) -1,1,3,3-tetramethyl disolocane dianhydride, etc.), to improve the abrasion with the substrate, and a diamine (e.g., 4,4'-diaminodiphenyl ether, -methane, -sulphone or -sulphide, benzidine, m- or p-phenylene diamine, etc.), in an aprotic solvent (e.g., N-methyl-2-pyrrolidone, N,N-dimethylacetamide, DMF, DMSO, etc.).
The polyimide is prepd. by heating the polyamidic acid at 250-400 deg.C to remove the solvent and to effect dehydration ring closure.
ADVANTAGE - The polyimide has low electroconductivity and high solvent resistance. etc.
1e-g/1

FS CPI EPI
FA AB; GI
MC CPI: A05-J01B; A12-E07A; A12-E07C; L03-H04E
EPI: U14-H03B1; V04-R07A1; V04-R07D; V04-R07L; V04-R07P; X12-E02B

L69 ANSWER 36 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1993:256643 HCAPLUS
DN 118:256643
TI Synthesis and film characteristics of silicone-modified acrylic polymers
AU Ohsugi, Koji
CS Nippon Paint K. K., Osaka, Japan
SO Techno-Cosmos (1992), 1, 2-9
CODEN: TCOSED; ISSN: 0917-9216
DT Journal
LA Japanese
CC 42-10 (Coatings, Inks, and Related Products)
AB Silicone macromonomers contg. alc. OH groups were partially esterified with methacrylic acid or maleic acid and then copolymd. with acrylic monomers. Coatings were obtained by curing the silicone-modified acrylic polymers with melamine resins and polyisocyantes. The mech. properties of the coatings were analyzed using a dynamic viscoelasticity test, and a surface anal. was made using ESCA and TEM. Uniform distribution of the silicone segment throughout the coating provided good weatherability without any adverse effect on coating flexibility, recoatability, and adhesion to Al substrates.
ST acrylic silicone coating weatherability; aminoplast crosslinker acrylic silicone coating; polyisocyanate crosslinker acrylic silicone coating; polyurethane acrylic silicone coating; melamine acrylic silicone coating
IT Polymer morphology
(of crosslinked silicone-modified acrylic polymer **coatings**, weatherability in relation to)
IT Siloxanes and Silicones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(acrylic-aminoplast-, **coatings**, weather-resistant)

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IT   Siloxanes and Silicones, uses
     RL: TEM (Technical or engineered material use); USES (Uses)
        (acrylic-polyurethane-, coatings, weather-resistant)
IT   Aminoplasts
     Urethane polymers, uses
     RL: TEM (Technical or engineered material use); USES (Uses)
        (acrylic-siloxane-, coatings, weather-resistant)
IT   Acrylic polymers, uses
     RL: TEM (Technical or engineered material use); USES (Uses)
        (aminoplast-siloxane-, coatings, weather-resistant)
IT   Monomers
     RL: SPN (Synthetic preparation); PREP (Preparation)
        (macro-, alc. hydroxy group-contg. siloxanes, in prepn. of
        silicone-modified acrylic polymer weather-resistant coatings)
IT   7429-90-5, Aluminum, uses
     RL: USES (Uses)
        (coatings for, weather-resistant, silicone-modified acrylic
        polymers as)
IT   79-41-4D, esters with silicone macromonomers, polymers with acrylic
     monomers and melamine resins or polyisocyanates   80-62-6D, polymers with
     partially esterified silicone macromoners   100-42-5D,
     polymers with partially esterified silicone
     macromoners   103-11-7D, 2-Ethylhexyl acrylate, polymers with partially
     esterified silicone macromoners   110-16-7D,
     2-Butenedioic acid (Z)-, esters with silicone macromonomers, polymers with
     acrylic monomers and melamine resins or polyisocyanates   868-77-9D,
     polymers with partially esterified silicone
     macromoners
     RL: TEM (Technical or engineered material use); USES (Uses)
        (coatings, weather-resistant)
IT   822-06-0   9003-08-1, U-Van 20N-60
     RL: MOA (Modifier or additive use); USES (Uses)
        (crosslinking agents, for acrylic-silicone coatings)

L69  ANSWER 37 OF 53  WPIX   (C) 2003 THOMSON DERWENT
AN   1991-141909 [20]   WPIX
DNN  N1991-109244         DNC C1991-061045
TI   Ceramic coatings to protect substrates prone to oxidation - prepd. by
     coating substrate with soln. contg. hydrogen silsesquioxane or hydrolysed
     siloxane(s) under inert gas.
DC   A26 A35 A85 L03 P42 U11
IN   HALUSKA, L A
PA   (DOWO) DOW CORNING CORP; (HALU-I) HALUSKA L A
CYC  10
PI   EP 427395      A  19910515 (199120)*
         R: BE DE ES FR GB IT NL
     CA 2027031     A  19910419 (199126)
     JP 03183675    A  19910809 (199138)
     US 5380567     A  19950110 (199508)        7p    B05D003-02
     EP 427395      B1 19960410 (199619)  EN   13p    H01L023-29      <--
         R: BE DE ES FR GB IT NL
     DE 69026469    E  19960515 (199625)              H01L023-29      <--
     ES 2088420     T3 19960816 (199639)              H01L023-29      <--
     JP 2977882     B2 19991115 (199954)        7p    C04B041-81      <--
     US 6171703     B1 20010109 (200104)              B32B018-00
ADT  EP 427395 A EP 1990-311008 19901008; JP 03183675 A JP 1990-276603
     19901017; US 5380567 A Cont of US 1989-423317 19891018, Cont of US
     1991-683908 19910411, US 1993-77469 19930615; EP 427395 B1 EP 1990-311008
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19901008; DE 69026469 E DE 1990-626469 19901008, EP 1990-311008 19901008; ES 2088420 T3 EP 1990-311008 19901008; JP 2977882 B2 JP 1990-276603 19901017; US 6171703 B1 Cont of US 1989-423317 19891018, Cont of US 1991-683908 19910411, Div ex US 1993-77469 19930615, US 1994-293331 19940822

FDT DE 69026469 E Based on EP 427395; ES 2088420 T3 Based on EP 427395; JP 2977882 B2 Previous Publ. JP 03183675; US 6171703 B1 Div ex US 5380567

PRAI US 1989-423317 19891018; US 1991-683908 19910411; US 1993-77469 19930615; US 1994-293331 19940822

REP EP 226208; EP 270229; EP 270241

IC B05D003-02; B05D005-12; **C04B041-81**; C23C016-24; **H01L021-56; H01L023-29**
ICM B05D003-02; B32B018-00; **C04B041-81; H01L023-29**
ICS B05D005-12; B32B015-20; C23C016-24; **H01L021-56**

AB EP 427395 A UPAB: 19930928
Formation of a ceramic-type coating, partic. on an electrical device, is by coating the substrate with a soln. contg. hydrogen silesquioxane resin or (partially) hydrolysed RxSi(OR)4-x where R = alkyl, aryl or unsatd. hydrocarbon and x = 0-2, evaporating the solvent, and heating the cooled substrate to 500-1000 deg.C under prior gas to ceramify the coating. A passivating coating may be applied on top of the ceramic coating, and heated to 00-00 deg.C under ammonia or inert gas.
Pref. may be a Si, Si-C, Si-N, or Si-C-N contg. coating; and is applied by chemical vapour deposition a silane, or alkylsilane as appropriate in an inert gas, alkane gas or ammonia, or by plasma enhanced or metal assisted chemical vapour deposition.
USE/ADVANTAGE - Protective coatings can be formed on substrates normally prone to oxidation at ceramification temp.. (Dwg.No.0/0)

FS CPI EPI GMPI

FA AB

MC CPI: A10-E05; A12-E01; A12-W12G; L03-H04E5; L04-C22
EPI: U11-A07; U11-D01C; U11-E02A1

L69 ANSWER 38 OF 53 JAPIO COPYRIGHT 2003 JPO

AN 1991-138556 JAPIO

TI CONTACT COMBUSTION TYPE CARBON MONOXIDE SENSOR

IN OGINO KAORU; OMURA AKIRA; NITA HOZUMI

PA YAZAKI CORP

PI JP 03138556 A 19910612 Heisei

AI JP 1989-275980 (JP01275980 Heisei) 19891025

PRAI JP 1989-275980 19891025

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991

IC ICM G01N027-16

AB PURPOSE: To substantially prevent the reception of the influence of a change in the state of an atm. temp., etc., by using a detecting element formed by carrying a group 8 metal on alumina and a comparing element **treated** with an org. **silicon** polymer having a **siloxane** bond.
CONSTITUTION: The group 8 metal alone, such as rhodium, palladium or platinum, or >=2 kinds thereof are carried on the γ-alumina obtd. by calcination at a prescribed temp. and are sufficiently pulverized. A small amt. of an alumina binder is then added to this catalyst and a proper volume of water is mixed therewith and the catalyst is kneaded to a pasty form. This paste is molded like a bead on a coil molded of platinum as a metallic resistance wire and thereafter, the platinum wire is energized and is calcined by heating to obtain the detecting element 3. The comparing element 4 is formed by immersing the similarly formed detecting element 3 into the soln. of the org. silicon polymer of chlorosilanes,

such as dimethyl dichlorosilane or **polysiloxane** prepolymer derived therefrom, then calcining the same after drying. The resulted elements 3, 4 are built into a bridge **circuit** and are used as a sensor.
COPYRIGHT: (C)1991,JPO&Japio

L69 ANSWER 39 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1990:517231 HCAPLUS
DN 113:117231
TI Mating metal transfer patterns
IN Takenoiri, Yasuo; Okada, Masuo; Aoki, Tsukasa; Okuhara, Takao; Yamashita, Kazuhiro
PA Hitake Seiko Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03F007-105
ICS B05D003-10; G03F007-26; G03F007-34
CC 42-11 (Coatings, Inks, and Related Products)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02077751	A2	19900316	JP 1988-230248	19880914
PRAI	JP 1988-230248		19880914		

AB An elec. conductive thin film formed by vacuum deposition on a plastic film is coated in a desired pattern with a plating resist and plated on the bare parts free from the resist, and the coated side is adhered to an adhesive layer on a transfer receptor made of **metals**, **ceramics**, plastics, etc. With appropriate selection of the conductive thin film thickness, resists, and adhesive strength of the adhesive following transfers can be made; (A) the metal plating and conductive thin film adhered to it, (B) the metal plating and conductive thin film and resist adhered to it, (C) the metal plating and conductive thin film and resist, or (D) the resist only. This pattern making is useful for the manuf. of **circuits**, name plates, membrane switches, etc.
ST metal pattern manuf; ceramic pattern manuf; plastic pattern manuf
IT Transfers
(for metal pattern formation on **metals** and **ceramics** and plastics)
IT Adhesives
(in transfers, for metal pattern formation, on **metals** and **ceramics** and plastics)
IT **Ceramic** materials and wares
Metals, uses and miscellaneous
Plastics
RL: USES (Uses)
(**metal** pattern formation on, transfers for)
IT Alkanes, uses and miscellaneous
Paraffin waxes and Hydrocarbon waxes, uses and miscellaneous
RL: USES (Uses)
(plating resists contg., for transfers for metal pattern formation on **metals** and **ceramics** and plastics)
IT Phenolic resins, uses and miscellaneous
RL: USES (Uses)
(plating resists, in transfers, for **metal** pattern formation on **metals** **ceramics** and plastics)

IT Resists
(plating, in transfers, for metal pattern formation on **metals** and **ceramics** and plastics)
IT **Siloxanes** and Silicones, uses and miscellaneous
RL: USES (Uses)
(polyether-, plating resists contg., for transfers for metal pattern formation on **metals** and **ceramics** and plastics)
IT **Siloxanes** and Silicones, uses and miscellaneous
RL: USES (Uses)
(polyoxyalkylene-, plating resists contg., for transfers for metal pattern formation on **metals** and **ceramics** and plastics)
IT Polyethers, uses and miscellaneous
Polyoxyalkylenes, uses and miscellaneous
RL: USES (Uses)
(**siloxane**-, plating resists contg., for transfers for metal pattern formation on **metals** and **ceramics** and plastics)
IT 74313-89-6, Sony Bond T 4100 129292-13-3, Sony Bond T 4000
RL: USES (Uses)
(adhesives, in transfers, for metal pattern formation on **metals** and **ceramics** and plastics)
IT 9002-86-2, PVC 9003-20-7, Poly(vinyl acetate) 129290-74-0, Cemedine EP 001
RL: USES (Uses)
(adhesives, in transfers, in metal pattern formation on **metals** and **ceramics** and plastics)
IT 18471-20-0, S-222 129292-11-1, S 40D
RL: USES (Uses)
(plating resists, in transfers for metal pattern formation on **metals** and **ceramics** and plastics)
IT 9002-88-4D, Polyethylene, chlorinated 9003-22-9, Vinyl acetate-vinyl chloride copolymer 129291-68-5, M 808
RL: USES (Uses)
(plating resists, in transfers, for **metal** pattern formation on **metals ceramics** and plastics)

L69 ANSWER 40 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1991-250635 [34] WPIX
DNC C1991-109098
TI Mixt. for hydrophobising building materials - contains oligo-methyl alkoxy-**siloxane**(s), and organic solvent or non-ionogenic surfactant and water.
DC A26 A93 L02
IN ABOLNIK, L R; ALEKSANDRO, G G; MCHEDLOV, O P
PA (CHEL-R) CHEM ELEMENT-ORG COMP; (INBU-R) IND BUILD CONS RES INST; (KHEN-R) KHARK ENG CONS INST; (ZAPO-R) ZAPOROZHZHELEZOBETON
CYC 1
PI SU 1595859 A 19900930 (199134)*
ADT SU 1595859 A SU 1985-3969309 19850906
PRAI SU 1985-3969309 19850906
IC **C04B041-64**; C08L083-06
AB SU 1595859 A UPAB: 19930928
Use of the prod. of hydrolytic **esterification** of vat residues from the synthesis of methylchlorosilane (I) as the oligomethyl alkoxysiloxane in the mixt. for hydrophobising building materials, improves its properties. The mxit. contains (in pts.wt.): (I) 0.03-0.1 and organic solvent 1 or (I) 0.03-0.2, noninogenic surfactant 0.001-0.025 and

balance water.
ADVANTAGE - Longer working life, reduced water absorption and increased chemical resistance of the articles are obtd. Bul.36/30.9.90
0/0
FS CPI
FA AB
MC CPI: A06-A00E; A12-R01; L02-D14M; L02-D14Q

L69 ANSWER 41 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1990-276986 [37] WPIX
DNN N1990-214050 DNC C1990-119657
TI Forming a protective coating on cuprate superconductors - by applying an organic soln. of a silica precursor and pyrolysing at low temp..
DC A26 A85 E11 L03 P42 U11 U14
IN BANEY, R H; BERGSTROM, D F; CARPENTER, L E
PA (BANE-I) BANEY R H; (DOWO) DOW CORNING CORP
CYC 10
PI EP 386969 A 19900912 (199037)*
R: BE DE ES FR GB NL
CA 2010335 A 19900909 (199048)
JP 02281511 A 19901119 (199101)
BR 9001110 A 19910305 (199114)
EP 386969 B1 19941207 (199502) EN 10p H01L039-24 <--
R: BE DE ES FR GB NL
DE 69014687 E 19950119 (199508) H01L039-24 <--
ES 2067665 T3 19950401 (199520) H01L039-24 <--
KR 9406777 B1 19940727 (199619) H01L039-00 <--
ADT EP 386969 A EP 1990-302293 19900305; JP 02281511 A JP 1990-56758 19900309; EP 386969 B1 EP 1990-302293 19900305; DE 69014687 E DE 1990-614687 19900305, EP 1990-302293 19900305; ES 2067665 T3 EP 1990-302293 19900305; KR 9406777 B1 KR 1990-3024 19900308
FDT DE 69014687 E Based on EP 386969; ES 2067665 T3 Based on EP 386969
PRAI US 1989-320986 19890309
REP A3...9102; EP 301962; NoSR.Pub; WO 8910909
IC B05D003-02; C04B035-00; **C04B041-81**; H01B013-00; **H01L039-24**
ICM **H01L039-00; H01L039-24**
ICS B05D003-02; C04B035-00; **C04B041-50; C04B041-81;** H01B013-00
AB EP 386969 A UPAB: 19930928
Cuprate superconductors are protected by: coating with an organic soln. of an SiO_2 film precursor; evaporating the solvent; and pyrolysing at a temp. below 400 deg.C in an O_2-contg. atmos.. The solvent is one which evaporates below 400 deg.C. and does not react with the superconductor.
Precursor is tetra-ethyl o-silicate or ethyl polysilicate, opt. including colloidal silica, or is a silsesquioxane $(RSiO_{3/2})_n$ where R = H, OH, lower alkyl, lower alkenyl or lower alkoxy, and n = 5-100, esp. hydrido- or emthyl-silsequioxane. In a further embodiment, the precursor is ethoxy-methyl-**polysiloxane** and colloidal SiO_2.
ADVANTAGE - Effective protection is provided at low cost.
0/0
FS CPI EPI GMPI
FA AB; DCN
MC CPI: A06-A00E2; A10-E05B; A11-B05D; A12-E02A; E31-P03; E35-A; L03-A01C
EPI: U11-C05A; U14-F

L69 ANSWER 42 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1988:530457 HCAPLUS

DN 109:130457
TI Electrically insulating protective coatings containing silicone-modified phenolic resins and epoxy resins
IN Harada, Nobuyuki; Aoshima, Yoshiyuki
PA Taiyo Yuden Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09D003-58
ICS B05D005-12; B05D007-00; B05D007-24; C09D003-56; C09D005-25
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63051473	A2	19880304	JP 1986-195241	19860822
	JP 07026055	B4	19950322		
PRAI	JP 1986-195241		19860822		

AB Potting compns. for **ceramic** capacitors, **hybrid** integrated **circuits**, etc., contain 70-90% silicone (5-30%)-modified phenolic resin and 10-30% epoxy resin contg. 0.2-5% imidazole-based curing agent. Thus, 10,000 ceramic capacitors with soldered lead wires were dipped in a mixt. of KR 211-modified Plyophen J 325 (contg. 5.7% silicone) 100, Epikote 154 4.5, Epikote 828 10.5, Curezol 2E4MZ (I) 0.37, silica 650, MeOH 200, and Me2CO 100 g, dried, and cured 30 min at 150.degree.. In testing, the dielec. loss and no. of capacitors showing insulation resistance .ltoreq.103 M.OMEGA. were 1500 and 0, resp., as prepd. and 1150 and 0, resp., after 2000 h at 60.degree. and 95% relative humidity, vs. 1200 and 0, resp., and 740 and 20, resp., with YH-306 (acid anhydride) in place of I.
ST silicone phenoplast epoxy potting; ceramic capacitor potting compn; integrated **circuit** potting compn; elec insulator potting epoxy; insulator potting epoxy curing; imidazole curing epoxy potting; crosslinker imidazole epoxy potting
IT Potting compositions
(epoxy resins, contg. **siloxane**-phenoplast and imidazole hardener)
IT Crosslinking agents
(imidazoles, for epoxy resin in potting compn.)
IT **Siloxanes** and Silicones, uses and miscellaneous
RL: USES (Uses)
(phenoplasts modified by, epoxy resins contg., for potting)
IT Epoxy resins, uses and miscellaneous
RL: USES (Uses)
(potting compns., contg. **siloxane**-phenoplast and imidazole hardener)
IT Phenolic resins, uses and miscellaneous
RL: USES (Uses)
(**siloxane**-modified, epoxy resins contg., for potting)
IT 693-98-1, 2-Methylimidazole 827-43-0, 2-Phenyl-4-methylimidazole 931-36-2 13682-32-1, Curezol 2P4MHZ 13750-62-4, 1-Benzyl-2-methylimidazole 116680-33-2
RL: USES (Uses)
(curing agent, for epoxy resin in potting compn.)
IT 25068-38-6, Epikote 828 63939-13-9, Epikote 154
RL: USES (Uses)
(potting compns., contg. silicone-phenoplast, hardeners for)

IT 65430-77-5, Plyophen J 325
RL: USES (Uses)
(silicone-modified, epoxy resins contg., for potting)

L69 ANSWER 43 OF 53 WPIX (C) 2003 THOMSON DERWENT
AN 1987-318432 [45] WPIX
DNC C1987-135804
TI Repairing selectively permeable composite membrane - useful for gas sepn., by coating membrane comprising sepn. function layer and supporting layer, and solidifying.
DC A35 A88 E36 J01
PA (TEIJ) TEIJIN LTD
CYC 1
PI JP 62227409 A 19871006 (198745)* 7p
ADT JP 62227409 A JP 1986-71332 19860331
PRAI JP 1986-71332 19860331
IC B01D013-04; B01D053-22
AB JP 62227409 A UPAB: 19930922
A material, in the liq. state at room temp. and solidifiable, is **coated** on a **selective** and permeable composite membrane (C) comprising an ultra thin sepn. function layer (A), which has one component-selective permeability; and a porous supporting material layer (B), and the coated layer is solidified.
The coating material is e.g. hardening type polyorganosiloxane, hardening urethane, hardening epoxy resin. The ultra thin sepn. membrane layer (A) is e.g. polyolefin, polydiene, polyacethylene, polyalkylphenylether, polyamide contg. **siloxane**, polyurea contg. **siloxane**. The porous supporting layer (B) is e.g. porous glass, sintered **metal**, **ceramics**, cellulose ester, polysulphone, PVC, polystyrene, PAN, polyamide, etc.
USE/ADVANTAGE - The composite membrane is useful for gas-sepn., esp. useful for prodn. of oxygen eneriched air.
0/0
FS CPI
FA AB; DCN
MC CPI: A11-C; A12-W11A; E31-D; J01-C03; J01-E03E

L69 ANSWER 44 OF 53 COMPENDEX COPYRIGHT 2003 EEI DUPLICATE 5
AN 1987(7):114853 COMPENDEX
TI Si-O-N CERAMICS FROM ORGANOSILICON POLYMERS.
AU Yu, Yuan-Fu (Universal Energy Systems Inc, Dayton, OH, USA); Mah, Tai-Il
MT Better Ceramics Through Chemistry II.
MO Materials Research Soc, Pittsburgh, PA, USA; US Air Force Office of Scientific Research, Washington, DC, USA
ML Palo Alto, CA, USA
MD 15 Apr 1986-19 Apr 1986
SO Materials Research Society Symposia Proceedings v 73.Publ by Materials Research Soc, Pittsburgh, PA, USA p 559-564
CODEN: MRSPDH ISSN: 0272-9172
ISBN: 0-931837-39-1
PY 1986
MN 09797
DT Conference Article
LA English
AB The preparation of **hybrid** pre-**ceramic** organosilicon polymers is described.The polymers were prepared by reactions of polysilazanes and **polysiloxanes**.Ceramic materials containing Si-O-N were obtained with high yields (80*) by pyrolyzing the polymers at

low temperatures (less than 800 degree C).A range of chemical compositions and properties can be obtained by using different ratios of polysilazanes and **polysiloxanes**.Microstructural characterization and densification studies are presented.The dense monolithic bodies were characterized using x-ray diffraction (XRD) analysis and scanning **electron** microscopy (SEM).(Edited author abstract) 8 refs.

CC 812 Ceramics & Refractories; 815 Plastics & Polymeric Materials; 802 Chemical Apparatus & Plants; 801 Chemical Analysis & Physical Chemistry; 741 Optics & Optical Devices

CT *CERAMIC MATERIALS:Synthesis; METALLORGANIC POLYMERS:Pyrolysis; X-RAY ANALYSIS; MICROSCOPIC EXAMINATION:Scanning **Electron** Microscopy

ST POLYSILAZANES; **POLYSILOXANES**; ORGANOSILICON POLYMERS; SILICON OXYNITRIDE; MICROSTRUCTURE; DENSIFICATION

ET N*O*Si; Si-O-N; C

L69 ANSWER 45 OF 53 HCAPLUS COPYRIGHT 2003 ACS

AN 1986:208876 HCAPLUS

DN 104:208876

TI Polyimide coating compositions from diesterified anhydride and aromatic diamine

IN Fryd, Michael; Merriman, Burt T., Jr.

PA du Pont de Nemours, E. I., and Co., USA

SO U.S., 7 pp.
CODEN: USXXAM

DT Patent

LA English

IC ICM B05D003-02
ICS C08G069-26

NCL 427385500

CC 42-2 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4562100	A	19851231	US 1984-650913	19840914
	CA 1255423	A1	19890606	CA 1985-490618	19850912
	JP 61083261	A2	19860426	JP 1985-202559	19850914
	JP 02038150	B4	19900829		
PRAI	US 1984-650913		19840914		

AB The application of a polyimide coating with high planarity, useful as insulator coatings for semiconductor devices, consists of dissolving an arom. dianhydride (.gtoreq.20% diesterified with a volatile alc.) in an aprotic solvent, adding an equimolar amt. of an arom. diamine, and applying the soln. to a substrate. Heating the coated substrate at 200-300.degree. causes de-esterification of the dianhydride, formation of polyamic acid (polycondensation of dianhydride with arom. diamine), and vaporization of the volatile alc. and solvent. Heating the coated substrate at 300-500.degree. completes the vaporization, dehydrates the polyamic acid, forms the polyimide (glass-transition temp. 250-330.degree.) and provides the repeating polymer units with .gtoreq.2 flexible linkages or .gtoreq.1 flexible linkage derived from the dianhydride provided the amine groups of the diamine are in the meta position relative to each other. For example, heating 0.2 mol 2,2-perfluoropropanebis(3,4-benzenedicarboxylic dianhydride) (I) 0.16 mol EtOH, and 100 g N-methylpyrrolidone (II) at 100.degree. for 1 h, cooling the partially disterified I to 40.degree., adding 0.2 mol oxydianiline in 66.4 g II, stirring 3 h at room temp., applying the resulting clear, amber, 44.9% solids soln. (viscosity 20 P) on Si wafer having metal lines

10-.mu. wide with 10-.mu. spaces, heating 30 min at 200.degree., 30 min at 300.degree., and 20 min at 425.degree. gave a coating with Talley Alphastep planarity 91%.

ST polyimide coating anhydride arom diamine; fluoropropanebisbenzenedicarboxylic dianhydride polyimide coating; oxydianiline polyimide coating; silicon wafer insulating planar coating

IT Coating process
(of silicon wafers with polyimides, partial esterification of anhydride in, for improved planarity)

IT Semiconductor devices
(polyimide elec. insuating **coatings** for, with improved planarity)

IT Electric insulators and Dielectrics
(**coatings**, polyimide, with improved planarity for silicon wafers, deposition of)

IT 32240-73-6 39940-16-4 40921-62-8 40921-63-9 41040-11-3 52234-55-6 69531-41-5 102265-72-5
RL: USES (Uses)
(coating with, of **silicon** wafers, **esterification** with ethanol in)

IT 64-17-5, uses and miscellaneous
RL: USES (Uses)
(in coating of silicon wafers with polyimides, for improved planarity)

IT 7440-21-3, uses and miscellaneous
RL: USES (Uses)
(wafers, coating of, with polyimides)

L69 ANSWER 46 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1986:150972 HCAPLUS
DN 104:150972
TI Acrylated polymers
IN Eckberg, Richard P.
PA General Electric Co., USA
SO U.S., 9 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C08K005-34
NCL 524104000
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 43
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4558082	A	19851210	US 1984-608748	19840510
	JP 61000232	A2	19860106	JP 1985-96176	19850508
	JP 03054972	B4	19910821		
	CA 1246283	A1	19881206	CA 1985-485709	19850627
	US 4663185	A	19870505	US 1985-757103	19850719
	JP 04227618	A2	19920817	JP 1991-73634	19910314
	JP 06027277	B4	19940413		
PRAI	US 1984-608748		19840510		

AB An acrylated polymer is prepd. from an epoxy-functional polysiloxane, acrylic acid and/or its deriv., and a catalyst (tetralkylurea and/or tetraalkylguanidine). The polymer is clear, hydrolytically stable, photocurable, and useful in optical fiber coatings, paper release coatings, etc. Adhesion of the polymers to substrates, esp. paper is improved by the addn. of monomers such as N-vinylpyrrolidinone and

diacrylates. Thus, a PhMe soln. of an epoxy silicone fluid (limonene oxide content 16.0%) 418, tetramethylurea 4.2, and acrylic acid 23 g was heated 20 h at 100.degree.. The solvent was removed at 130.degree./10 mm to give 440 g shelf-stable, clear fluid polymer (viscosity 1150 cP). The polymer was mixed with 4% diethoxyacetophenone, coated (2 mil) on a polyethylene kraft substrate, and exposed to 400 W/in.2 UV radiation under N at 2.0 m/s line speed. The coating exhibited good cure, no smearing, and good adhesion.

ST esterification catalyst acrylic epoxysiloxane; urea catalyst esterification acrylic; guanidine catalyst esterification acrylic; acrylate siloxane photocuring coating; paper release coating photocuring; fiber optic coating photocuring; hydrolysis stability acrylate siloxane; transparency siloxane acrylate photocuring

IT Crosslinking agents
(acrylates and vinyl monomers, for photocurable acrylated siloxanes)

IT Epoxides
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of, with acrylic acid, catalysts for)

IT Esterification catalysts
(guanidine and urea derivs., for acrylic acid and epoxy siloxanes)

IT Paper
(release **coatings** for, photocurable acrylated siloxanes as)

IT Hydrolysis
(resistance to, acrylated siloxanes with improved)

IT Siloxanes and **Silicones,** reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(epoxy, **esterification** of, with acrylic acid, catalysts for)

IT Crosslinking
(photochem., of acrylated siloxanes)

IT Coating materials
(photocurable, acrylated siloxanes, prepn. and curing of)

IT Parting materials
(release **coatings,** photocurable acrylated siloxanes for, on paper)

IT Epoxy resins, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(siloxane-, esterification of, with acrylic acid, catalysts for)

IT 88-12-0, uses and miscellaneous
RL: USES (Uses)
(adhesion promoters, for photocurable acrylated siloxanes)

IT 80-70-6 632-22-4
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for esterification of acrylic acid with epoxysiloxanes)

IT 4074-88-8 13048-33-4 15625-89-5 24447-78-7 66392-67-4
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinking agents, for photocurable acrylated siloxanes)

IT 79-10-7DP, esters with epoxysiloxanes 1195-92-2DP, siloxane derivs., acrylated
RL: PREP (Preparation)
(prepn. of photocurable, catalysts for)

L69 ANSWER 47 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1983:577184 HCAPLUS
DN 99:177184
TI Adhesive-bonded covers for semiconductor chips
PA Nippon Electric Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
IC H01L023-28; H01L021-312
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58078446	A2	19830512	JP 1981-176797	19811104
PRAI	JP 1981-176797		19811104		

AB Ultrafine wires connecting a very large-scale integrated **circuit** (e.g., 64 kilobyte CMOS RAM) to the **metal** terminals in its **ceramic** casing, which are susceptible to breakage or detachment during the application and curing of liq. encapsulating compns., are protected by sealing the semiconductor wafer under silicone adhesive-coated Si plates that cover its entire surface except the wire contact points on its periphery.
ST encapsulation semiconductor adhesive bonded silicon; integrated **circuit** sealing cover plate
IT **Siloxanes** and Silicones, uses and miscellaneous
RL: TEM (Technical or engineered material use); USES (Uses)
(adhesives, for bonding of silicon sealing plates to integrated **circuit** chips)
IT Potting
(of integrated **circuits**, with adhesive-bonded silicon plates)
IT Semiconductor devices
(sealing of, with adhesive-bonded silicon plates)
IT Adhesives
(silicone, for bonding silicon sealing plates to integrated **circuit** chips)
IT 7440-21-3, uses and miscellaneous
RL: USES (Uses)
(plates, silicone adhesive-bonded, for encapsulation of high-d. integrated **circuit** chips)

L69 ANSWER 48 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1984:464276 HCAPLUS
DN 101:64276
TI Organosilicate coatings for thick-film microcircuits on metallic substrates
AU Kharitonov, N. P.; Trizna, Yu. P.; Stepanov, K. N.; Idels, J.
CS USSR
SO Antikorroz. Pokrytiya, Tr. Vses. Soveshch. Zharostoikim Pokrytiyam, 10th (1983), Meeting Date 1981, 246-7. Editor(s): Borisenko, A. I. Publisher: Nauka, Leningr. Otd., Leningrad, USSR.
CODEN: 51WVA7
DT Conference
LA Russian
CC 76-3 (Electric Phenomena)
AB Organosilicate coatings VNT-34, and the same coatings with introduced cryst. glass STz-273 were studied. On substrates with a VNT-34 coating, after brazing of the film elements the resistance of the isolation narrowed, and the resistance of the resistors departed sharply from the normal value, as a result of diffusion. Introduction of the glass ceramic minimizes these effects.
ST **siloxane** glass **ceramic coating**
circuit
IT Glass **ceramics**

(**siloxane coatings** contg., for thick-film
microcircuits for metallic substrates)
IT Coating materials
(**siloxane,** contg. glass ceramics, for thick-film
microcircuits on metallic substrates)
IT Metals, uses and miscellaneous
RL: USES (Uses)
(substrates, for thick-film microcircuits, coating with
siloxanes contg. glass ceramics for)
IT **Electric circuits**
(micro-, coatings from **siloxanes** contg. glass
ceramics for, on **metallic** substrates)

L69 ANSWER 49 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1974:21445 HCAPLUS
DN 80:21445
TI Photopolymerizable compositions and elements containing organosilanes
IN Roos, Leo
PA du Pont de Nemours, E. I., and Co.
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
IC G03C
NCL 096083000
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic Processes)
Section cross-reference(s): 71
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3758306	A	19730911	US 1971-128191	19710325
PRAI	US 1971-128191		19710325		

AB The adhesion and wettability of addn.-polymerizable ethylenically unsatd. photoresist photopolymers, esp. poly(alkyl methacrylate), to glass, **metal**, or **ceramics** in printed **circuit** manuf. are improved by incorporating in the photoresist coating compn. 0.5-15 wt. % of a silane or polysilane. Thus, a photoresist coating compn. contains poly(methyl methacrylate) (I) (mol. wt. 30,000) 4, I of mol. wt. 60,000 1.5, triethylene glycol diacetate 8, trimethylolpropane triacrylate 4 g, 1% 2-tert-butylanthraquinone in MeOH 6 ml, 2,2'-dihydroxy-4-methoxybenzophenone 1 ml, and methylene chloride to make 160 g, plus an addnl. 0.5 ml of .gamma.-methacryloxypropyltrimethoxysilane. With resists obtained with this compn. on Si wafers, etchant undercutting is not obsd.
ST silane photoresist semiconductor etching; photopolymer silane adhesion promoter
IT **Siloxanes** and Silicones, uses and miscellaneous
RL: USES (Uses)
(dimethyl, photoresists contg. poly(alkyl methacrylates) and, for
printed **circuits**)
IT Resists
(photo-, poly(alkyl methacrylae)-silane coatings as, for printed
circuits)
IT Rubber, chlorinated
(photoresists contg. silanes and, for printed **circuits**)
IT **Electric circuits**
(photoresists for, of silane-poly(alkyl methacrylate) mixts.)
IT Polyamides, uses and miscellaneous
RL: USES (Uses)

(photoresists, contg. silane adhesives, for printed **circuits**)
IT Adhesives
(silanes, for methyl methacrylate polymer photoresists for printed **circuits**)
IT 75-94-5 2996-92-1 51749-68-9 51749-69-0 51749-71-4
RL: USES (Uses)
(photoresists contg. methyl methacrylate polymers and, for printed **circuits**)
IT 78-08-0
RL: USES (Uses)
(photoresists contg. poly(alkyl methacrylates) and, for printed **circuits**)
IT 9011-14-7
RL: USES (Uses)
(photoresists contg. silanes and)
IT 9003-00-3 9003-20-7 9003-22-9 9004-36-8 25086-15-1 28136-81-4
RL: USES (Uses)
(photoresists contg. silanes and, for printed **circuits**)
IT 2530-85-0 51749-67-8
RL: USES (Uses)
(photoresists contg., for printed **circuits**)
IT 115-21-9 919-30-2 1067-53-4 1760-24-3 2530-83-8 2761-24-2 3388-04-3
RL: USES (Uses)
(photoresists from methyl methacrylate polymers and, for printed **circuits**)
IT 41685-91-0
RL: USES (Uses)
(photoresists, for printed **circuits**)

L69 ANSWER 50 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1969:117790 HCAPLUS
DN 70:117790
TI Resilient silicone cushions between **ceramic** bodies and surrounding **metallic** supporting flanges
IN Gamble, James R.
PA Westinghouse Electric Corp.
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
IC C09J; C03C
NCL 161206000
CC 57 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3437554	A	19690408	US 1965-433529	19650126
	CH 487089	A	19700315	CH 1965-487089	19651217
PRAI	US 1964-420421		19641222		
	US 1965-433529		19650126		

AB The joints described in U.S. 3,307,004 and earlier patents between these flanges and the molded porcelain insulators of **circuit** -interrupters are improved for long service without cracking, by interposing in them a thin layer of permanently tacky and very viscous material which is preferably an organopolysiloxane contg. 30-95% R2SiO where R is Me or Ph, and 5-70% of a benzene-sol. resin copolymer of SiO2 and R3'SiO1/2 where R' is an alkyl radical of <4 C atoms/mol. or a Ph

radical, and the ratio of R3'SiO1/2/SiO2 is 0.6-0.9/1. A specially suitable silicone adhesive for this application is the methylsiloxane sold as Dow Corning 271, or a mixt. of 50 parts by wt. (Me)3SiO1/2 + SiO2 having 1.2 Me units/Si atom, 50 parts dimethylsiloxane having over 106 cp. viscosity at 25.degree. and 55 plasticity, and 2.5 parts benzoyl peroxide or Pb naphthenate. These compns. used as cushions 1-15 mils thick remain flexible from -80 to >500.degree.F. Suitable joint designs for **circuit**-breakers and lightning arresters are described and illustrated.

ST silicone cushions insulators; insulators silicone ceramic
IT Electric insulators
(adhesives for porcelain, **siloxanes** as)
IT Porcelain
(adhesives for, **siloxanes** as)
IT **Siloxanes,** uses and miscellaneous
RL: USES (Uses)
(as adhesives in porcelain elec. insulators)
IT Adhesives, uses and miscellaneous
(**siloxanes,** for porcelain elec. insulators)

Not this Ref [illegible]

L69 ANSWER 51 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1969:517504 HCAPLUS
DN 71:117504
TI Encapsulation of integrated **circuits**
AU White, Malcolm Lunt
CS Bell Teleph. Lab., Inc., Allentown, PA, USA
SO Proceedings of the IEEE (1969), 57(9), 1610-15
CODEN: IEEPAD; ISSN: 0018-9219
DT Journal
LA English
CC 71 (Electric Phenomena)
AB Integrated **circuits** mounted on ceramic substrates must be protected from moisture and from mech. damage by an encapsulation system which must have the same long-term stability as the device itself. Beam-lead Si nitride protected **circuits** are subjected to >300.degree. long-term aging as well as to high-temp. steam to accelerate failures; thus, encapsulants must have the same stability. A silicone-based encapsulation system which meets these rigid requirements is described. A no. of resins and rubbers have been evaluated for their ability to maintain low leakage currents under high humidity conditions by measurement of the leakage on **coated metallized ceramics** under both high humidity and liq. water environments. An accelerated aging program was carried out to establish the long-term stability of these coating systems from the standpoint of their moisture-protecting abilities. The extrapolated lifetime of the silicone coatings is about the same as that established for the integrated **circuits** at their operating temp. From consideration of published permeability data and the results obtained in this study, it appears that the mechanism of protection against moisture is the inactivation of sites on the surface where water can adsorb or condense to form a continuous film of water which could lead to elec. leakage currents on either the device or substrate surfaces. The best protection is thus afforded by those materials that either chem. react with the surface or are strongly adsorbed at the sites where water would normally condense.
ST encapsulation integrated **circuits;** integrated **circuits** encapsulation
IT **Siloxanes,** uses and miscellaneous
RL: USES (Uses)

(encapsulation with, of **elec.** integrated **circuits**)
IT **Electric circuits**
(integrated, encapsulation of, with **siloxanes**)

L69 ANSWER 52 OF 53 HCAPLUS COPYRIGHT 2003 ACS
AN 1967:407394 HCAPLUS
DN 67:7394
TI Nuclear environmental effects on spacecraft thermal control coatings
AU Breuch, R. A.; Pollard, H. E.
CS Lockheed Missiles and Space Co., Palo Alto, CA, USA
SO NASA (Nat. Aeronaut. Space Admin.) Access. (1965), NASA-SP-55, 365-79
Avail.: CFSTI, $3 cy
From: Sci. Tech. Aerospace Rept. 1965, 3(16), N65-26895
CODEN: NAACAF
DT Report
LA English
CC 76 (Nuclear Technology)
AB A total of 250 different standard, developmental, and research thermal-control coatings have been irradiated in vacuum with a nominal integrated dose of 1010 ergs-g. (C) .gamma.-rays and 1014 fast n/cm.2 A preliminary summary of the effects of nuclear radiation on the optical properties of some **selected coating** materials is presented. The materials include inorg. (silicate bonded) systems, plasma-sprayed **ceramic** coatings, chem. polished **metals** , acrylic- and epoxy-base coatings, silicone dispersion systems (air-cured), and adhesive-applied silicone films. Optical properties before and after irradn. are given. Also presented are plots of total hemispherical emittance measured during irradn. Effects of accelerated simultaneous nuclear and uv radiation on solar-reflector coatings and the effects of sample temp. during irradn. are included.
ST THERMAL CONTROL COATINGS IRRADN; COATINGS THERMAL CONTROL IRRADN; IRRADN THERMAL CONTROL COATINGS; SPACECRAFTS HEAT CONTROL COATING
IT Thermal insulators
(coatings of, radiation effects on optical properties of spacecraft)
IT Ceramic materials
Siloxanes, uses and miscellaneous
RL: USES (Uses)
(coatings of, radiation effects on optical properties of spacecraft thermal control)
IT Optical properties
(of coatings, for spacecraft thermal control, radiation effects on)
IT Gamma rays, chemical and physical effects
Light, ultraviolet, chemical and physical effects
Radiation, chemical and physical effects
(on optical properties of spacecraft thermal control coatings)
IT Coating materials
(on spacecraft, radiation effects on optical properties of thermal control)
IT Metals, properties
RL: PRP (Properties)
(optical properties of spacecraft thermal insulators of)
IT Resins, epoxy, properties
RL: PRP (Properties)
(optical properties of spacecraft thermal insulators of, radiation effect on)
IT Space vehicles
(radiation effects on optical properties of thermal control coatings of)

IT Silicate
RL: PROC (Process)
(coatings of, radiation effects on optical properties of spacecraft thermal control)
IT 12586-31-1, Neutrons, chemical and physical effects
(on optical properties of spacecraft thermal control coatings)

L69 ANSWER 53 OF 53 COMPENDEX COPYRIGHT 2003 EEI
AN 1974(8):3623 COMPENDEX DN 740851657
TI PROPERTIES OF SOME ELECTRON SENSITIVE **SILOXANE** RESISTS.
AU Gazard, M. (Thomson-CSF, Orsay, Fr); Dubois, J.C.; Duchesne, C.
SO Appl Polym Symp n 23, 1974, for Meet, Dallas, Tex, Apr 8-13 1973, p 107-116
CODEN: APPSAW
LA English
AB Three negative **siloxane** resists were synthesized: polymethylsiloxane (PMS), polyvinylsiloxane (PVS), and polyphenylsiloxane (PPA). Properties such as molecular weight, refractive index, and stability were determined. PMS and PVS must be dissolved in 2-propanol because solutions are more stable than the dry products. The resists were **coated** on **silicon** wafers and irradiated in a scanning electron microscope. PMS and PPS need a charge dose density in the order of 10-4 to 10-3 C/cm2 to be completely crosslinked. PVS needs only 5*10-6 C/cm2, and therefore is the more interesting and promising resist.Through heating at 800 C the crosslinked resists can be converted into silica. The dielectric properties of the formed silica were measured: the resistivity was 1012OMEGAcm, the dielectric constant was between 4 and 8, and the dielectric strength was 106 V/cm. These resists are suitable for the fabrication of microelectronic devices and integrated optics. 8 refs.
CC 622 Radioactive Materials; 711 Electromagnetic Waves; 713 Electronic Circuits; 815 Plastics & Polymeric Materials
CT *SILICONES:Irradiation; POLYMERIZATION; INTEGRATED **CIRCUITS**; ELECTRON BEAMS
ST ELECTRON RESISTS